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OCEANOGRAPHIC OBSERVATIONS, 1959 EAST COAST OF THE UNITED STATES

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OCEANOGRAPHIC OBSERVATIONS, 1959
EAST COAST OF THE UNITED STATES

by

C. Godfrey Day
Research Assistant

Woods Hole Oceanographic Institution
Woods Hole, Massachusetts

Contribution No. 1104 from the Woods Hole Oceanographic Institution

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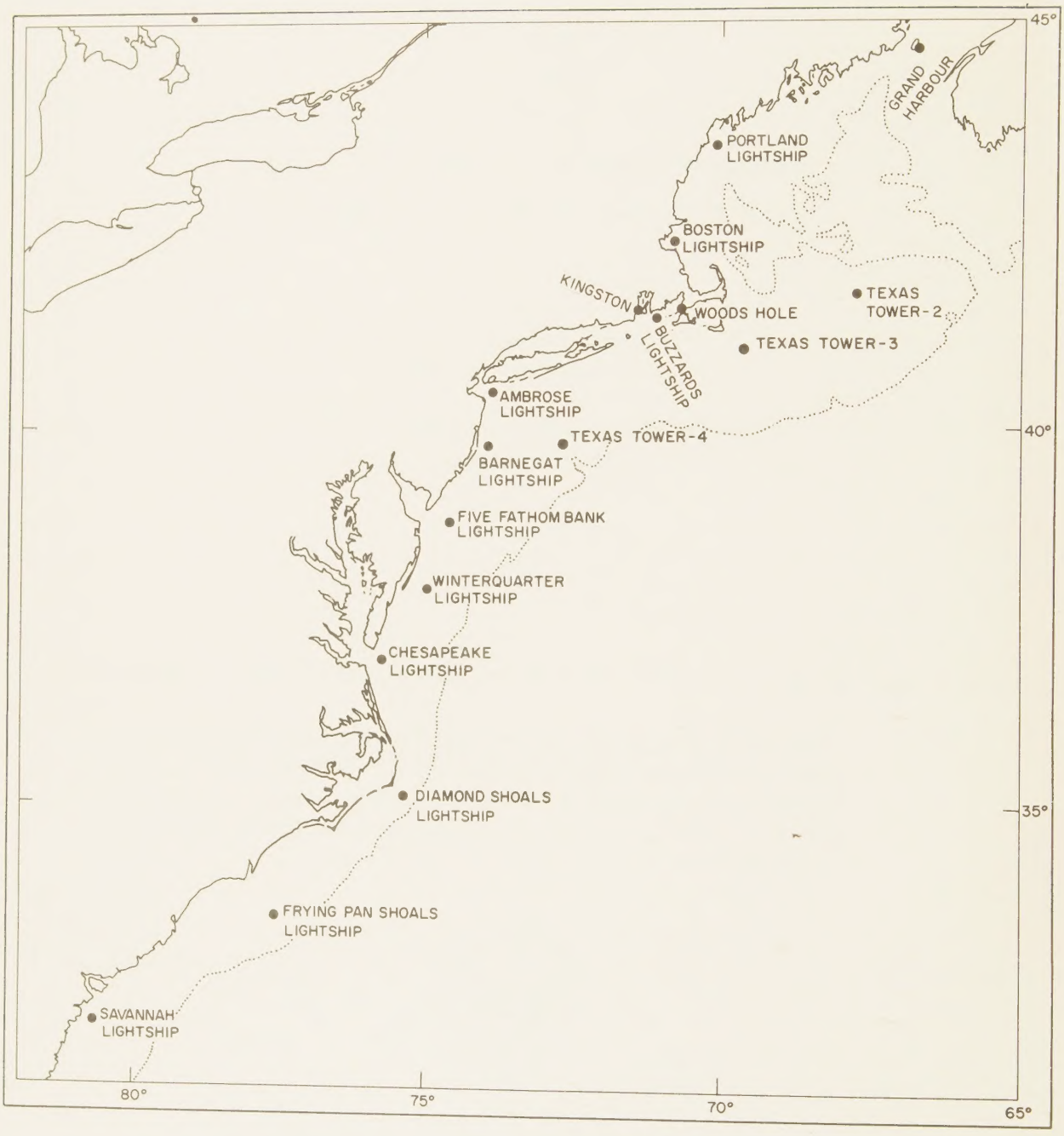

Frontispiece. Locations along the Atlantic Coast reported herein.

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OCEANOGRAPHIC OBSERVATIONS, 1959
EAST COAST OF THE UNITED STATES

ABSTRACT

Daily water temperature and salinity observations for 1959 from seventeen locations along the Atlantic seaboard are tabulated, plotted and discussed for the fourth consecutive year.

INTRODUCTION

Through the cooperation of the U. S. Coast Guard, the Woods Hole Oceanographic Institution established late in 1955 a series of oceanographic observation posts at a number of lightship stations along the east coast of the United States. Additional data have been obtained from independent observers, from the Narragansett Marine Laboratory and, courtesy of the U. S. Air Force, from Texas Towers 2, 3 and 4.

The lightship data have been forwarded on a monthly basis to Woods Hole where they have been processed. The bathythermograms have been read at several levels and tabulated; salinities were determined by salinometer. The records of air temperature, weather, wind and clouds were used in studying the other data, but are not presented here as they are the same as those published in the daily weather maps of the U. S. Weather Bureau.

In addition to tabulating these data, mean temperatures for each level for three equal time periods per month have been determined and plotted as time-depth profiles for the year at each station where bathythermographs were used. The one-third monthly mean surface temperatures have been plotted in comparison with the monthly mean surface temperature for the period of record of each station.

The one-third monthly means of surface salinity have been appended to the temperature profiles, together with the weekly bottom salinity values.

The monthly mean surface water temperatures for the year 1959 for all stations are listed in table 1 for comparison with previous records.

We are particularly indebted to the U. S. Coast Guard personnel aboard participating lightships, to Mr. Edward Green at Grand Harbour, Grand Manan and to the personnel of the 12th Weather Squadron, U.S.A.F. at the three Texas Towers reporting and at Otis Air Force Base.

We hope to continue the collection and publication of these data on an annual basis, and should be glad to include data of a comparable nature from other locations.

This work was supported by the Bureau of Commercial Fisheries, U. S. Fish and Wildlife Service, under Contract No. 14-17-008-62 with the Woods Hole Oceanographic Institution.

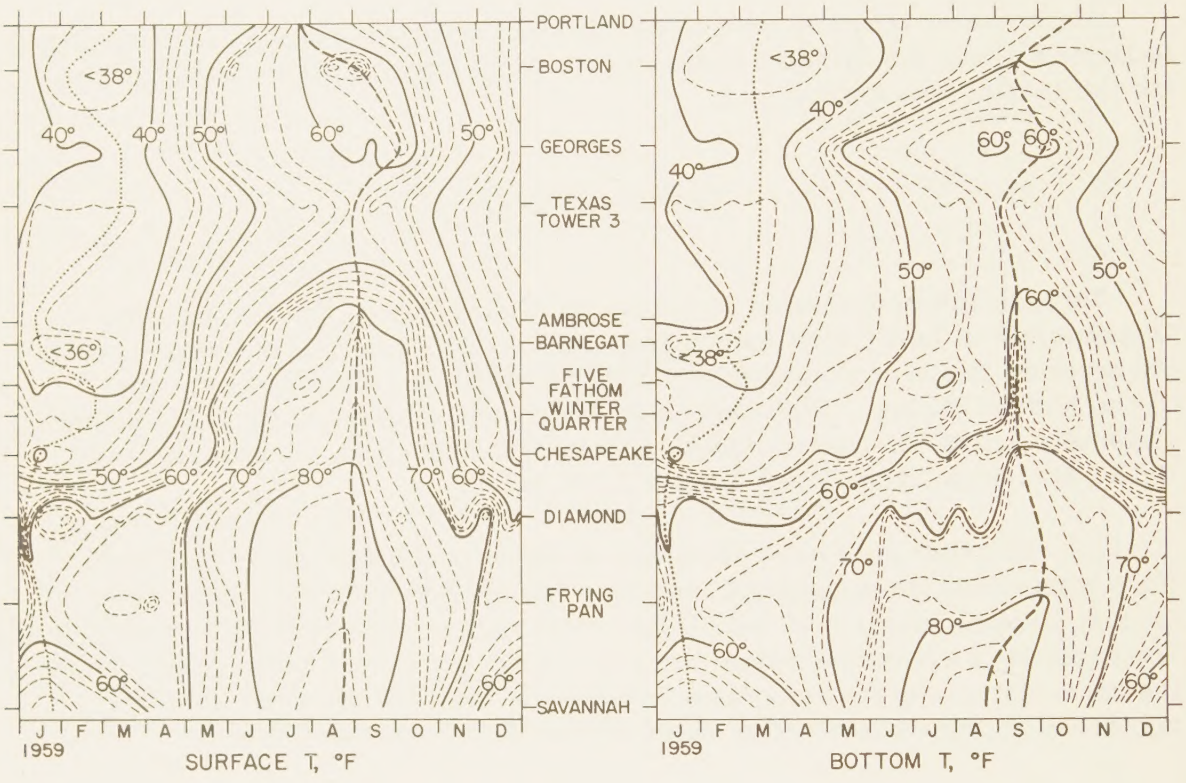

Figure 1. The cycle of temperature at the surface (left) and bottom (right) along the series of observation posts for 1959. Heavy dotted and dashed lines indicate minimum and maximum temperatures respectively.

COMMENTARY

In the present report an effort has been made to relate some of the observed hydrographic conditions to weather, particularly to anomalous air temperatures and precipitation. Where reference is made to such anomalies, the source is the appropriate issue of Weatherwise (vol. 12, 2-6, 1959 and vol. 13, 1, 1960) covering the weather patterns of 1959. Additional data of a short term nature have been taken from daily weather maps and from lightship observations.

Surface Temperature (figure 1)

It should be noticed in figure 1 that the Nantucket Lightship station, used in earlier reports, has been replaced by Texas Towers #3, since the data from the former location were wholly inadequate and are not reported this year. This substitution of itself serves to change the temperature pattern quite markedly, because of the relatively cold conditions in the region of Tower #3 (Day, 1959). Had Nantucket data been available, the 60° isotherm at the surface would have extended to Portland as in other years.

Winter conditions, January through March, were similar to those of 1956 and 1957, except that water temperatures were somewhat lower than usual from Georges Shoal southwestward to the Barnegat station.

The reappearance of the winter temperature barrier at Diamond Shoals represents a return to normal after the unusual breakthrough which occurred a year earlier. Warming followed the usual trend in time and rate, except at Winter Quarter Lightship, where it was advanced.

All stations from Chesapeake northward experienced a cool summer through July except at Portland and Georges Shoals; this was followed by rapid warming during August and early September. The mean surface water temperature for the latter month was the highest on record for Barnegat, Five Fathom Bank and Winter Quarter. At Boston the September mean was the highest since 1890. The peak during the first decade of that month was a reflection of a prolonged regime of southerly winds which began on August 12th and continued through early September. Following this period a Canadian anticyclone dominated the east coast for 10 days with below normal air temperatures and the surface water cooled rapidly. Nevertheless, values were generally above the mean until mid-November.

Bottom temperature (figure 1)

Winter bottom water temperatures were very similar to the 1956 and 1957 values, and vernal warming progressed normally. The maximum at stations between Boston and Chesapeake occurred in mid-September , 10

days after the surface maximum. At Boston, Five Fathom Bank and Chesapeake, readings were the highest observed to date. The sudden warming appears to be the direct result of northerly and northeasterly winds, force 4-6, which on September 11th and 12th, mixed the water column, cooling the surface and warming the bottom. The thermocline, however, was not completely destroyed until some weeks later.

Table 1

Surface Water Temperatures - Monthly and Annual Means

for 1959

	Grand Manan	Portland Lightship	Boston Lightship	Georges Shoal	Nantucket Shoals	Woods Hole	Buzzards Lightship	Kingston Rhode Island	Ambrose Lightship	Texas Tower #4	Barnegat Lightship	Five Fathom Bank Lightship	Winter Quarter Lightship	Chesapeake Lightship	Diamond Shoal Lightship	Frying Pan Shoals Lightship	Savannah Lightship
Jan.	32.4	39.7	38.5	40.7	38.7	31.3	36.8	34.4	-	41.2	35.7	40.0	42.5	-	61.7	64.1	51.4
Feb.	31.0	37.7	36.1	40.7	38.2	31.2	34.8	33.7	-	45.7	35.9	39.3	40.7	41.8	63.7	64.7	54.3
Mar.	34.3	37.0	36.5	39.3	38.0	35.4	36.5	37.9	39.1	46.1	38.5	39.2	43.0	45.9	62.6	63.0	57.1
Apr.	39.4	41.1	41.6	42.1	39.5	43.1	42.9	45.9	-	45.4	44.7	45.6	48.7	51.2	63.5	66.5	63.7
May	45.1	46.9	49.2	49.6	43.9	53.1	49.7	53.7	-	49.9	-	55.1	59.0	59.3	73.8	72.7	73.4
Jun.	48.1	49.7	55.9	54.5	48.6	61.8	57.3	62.2	-	58.8	-	65.2	68.9	68.9	78.9	78.9	80.1
Jul.	53.6	57.5	59.8	58.1	53.8	68.7	63.4	67.5	68.2	66.0	69.0	71.8	74.0	74.6	82.1	81.7	83.9
Aug.	56.0	58.9	64.4	-	54.7	70.8	65.6	68.6	70.7	65.6	71.4	-	74.8	77.2	82.4	82.4	85.1
Sept.	-	55.7	63.9	60.2	56.5	69.6	65.9	67.5	70.1	69.0	72.7	73.7	75.3	76.5	80.2	81.6	81.1
Oct.	-	-	56.3	60.2	52.4	61.8	60.6	61.4	-	63.0	66.2	-	68.4	69.8	73.9	78.7	76.7
Nov.	-	-	49.7	51.7	47.9	50.6	52.5	51.4	-	53.8	55.3	56.7	58.8	59.6	67.3	74.0	66.3
Dec.	-	43.6	44.8	47.0	42.3	42.2	46.4	43.8	-	49.8	-	48.9	51.3	50.2	65.3	67.0	55.4
Ann.	-	-	49.7	-	46.2	51.6	51.0	52.4	-	54.5	-	-	58.8	-	71.3	73.2	69.0

Grand Harbour, Grand Manan (Figure 2, Table 2)

The observations here came to an end in August when the observer was transferred to another station. The winter was colder than the three previous winters and warming was slow. The summer water temperature was also low compared with the previous record.

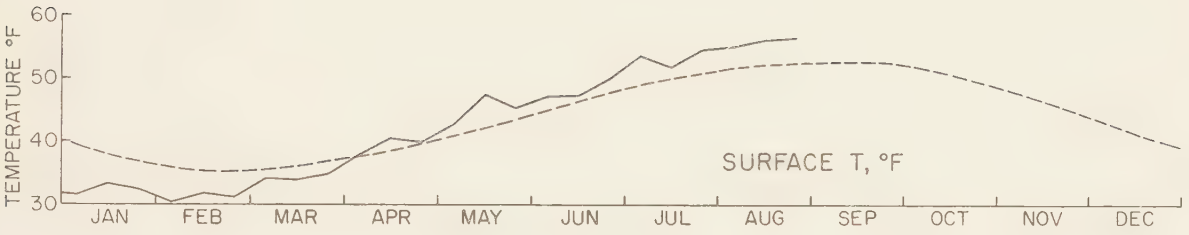

Figure 2. Grand Harbour, Grand Manan, 1959, (solid line) and Southwest Head, Grand Manan, 1929-1936 (dashed line).

Table 2

GRAND HARBOUR, GRAND MANAN, N. B., CANADA 44°40.8'N. 66°44.6'W.

1959

Surface Temperature °F

Month / Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.2	29.0	33.0	36.2	39.0	47.0	50.2	55.4				
2	34.8	28.9	38.0	36.0	39.8	49.1	51.2	57.8				
3	35.5	29.0	35.0	38.0	40.0	45.5	52.0	54.0				
4	34.6	32.0	34.0	36.9	40.4	47.8	50.0	56.8				
5	31.0	30.8	37.0	38.0	43.6	49.6	55.0	-				
6	29.0	34.0	33.4	38.1	41.0	48.6	61.2	54.4				
7	28.9	30.6	-	39.0	42.0	46.0	52.0	53.2				
8	29.0	29.0	32.0	38.1	43.0	45.4	58.0	55.0				
9	29.8	29.8	31.7	39.5	46.8	45.9	52.8	57.0				
10	30.1	30.0	33.2	40.0	50.0	47.2	54.0	53.0				
11	30.5	29.5	31.0	38.8	47.0	46.0	50.1	53.0				
12	31.6	32.4	31.0	42.5	50.0	47.5	53.0	56.5				
13	33.7	30.0	32.0	41.4	52.1	51.0	51.0	54.2				
14	31.9	33.0	32.4	42.8	45.9	49.0	-	55.3				
15	33.0	31.0	34.2	43.0	45.3	47.9	52.0	54.6				
16	35.5	31.5	38.3	38.0	46.0	48.0	51.0	57.2				
17	36.5	34.2	36.0	38.0	46.0	46.0	54.2	56.1				
18	30.3	33.0	39.0	37.0	47.9	45.5	-	56.0				
19	33.8	-	31.0	44.9	46.0	45.0	51.8	57.8				
20	36.0	-	34.0	38.7	47.5	47.0	-	60.2				
21	34.4	29.2	34.5	36.0	44.8	49.6	-	54.0				
22	37.4	29.2	35.3	37.1	43.3	48.0	54.0	59.0				
23	34.7	29.0	30.0	39.0	46.3	51.8	54.6	55.5				
24	30.0	31.4	30.0	42.0	44.0	51.8	52.9	57.4				
25	30.4	32.0	34.2	42.1	42.5	49.5	50.9	55.2				
26	29.0	31.0	35.0	44.8	44.0	49.0	51.8	58.0				
27	30.6	33.0	35.2	39.0	47.5	47.4	54.2	58.7				
28	30.5	34.0	32.5	38.3	46.0	47.5	56.0	59.3				
29	33.5		37.0	39.8	47.9	50.8	56.8	55.5				
30	34.0		37.2	39.4	47.2	53.4	57.8	53.8				
31	-		42.0		46.0		57.6	55.4				
Mean	32.4	31.0	34.3	39.4	45.1	48.1	53.6	56.0				

Portland Lightship (Figure 3, Table 3)

Surface temperatures during February and March were slightly below the mean and reflected the negative air temperature anomalies for those months; the minimum occurred in mid-March. Early May showed a similar positive relationship between air and sea surface temperature and resulted in a rapid development of the thermocline. From June through September surface water temperatures were uniformly below the mean, even though air temperatures were ca. 2°F above normal during July, August and September. The autumn turnover occurred sometime in November and cooling was close to the mean. The maximum bottom temperature undoubtedly occurred in November, but was missed because of instrument failure.

Surface salinity, January through March, was high compared to values for the three previous years. The minimum in mid-April was not as low as were the minima of 1956 and 1958, but was below that of 1957. A second low occurred in late June and July, reflecting the excessive rainfall and runoff experienced in the East.

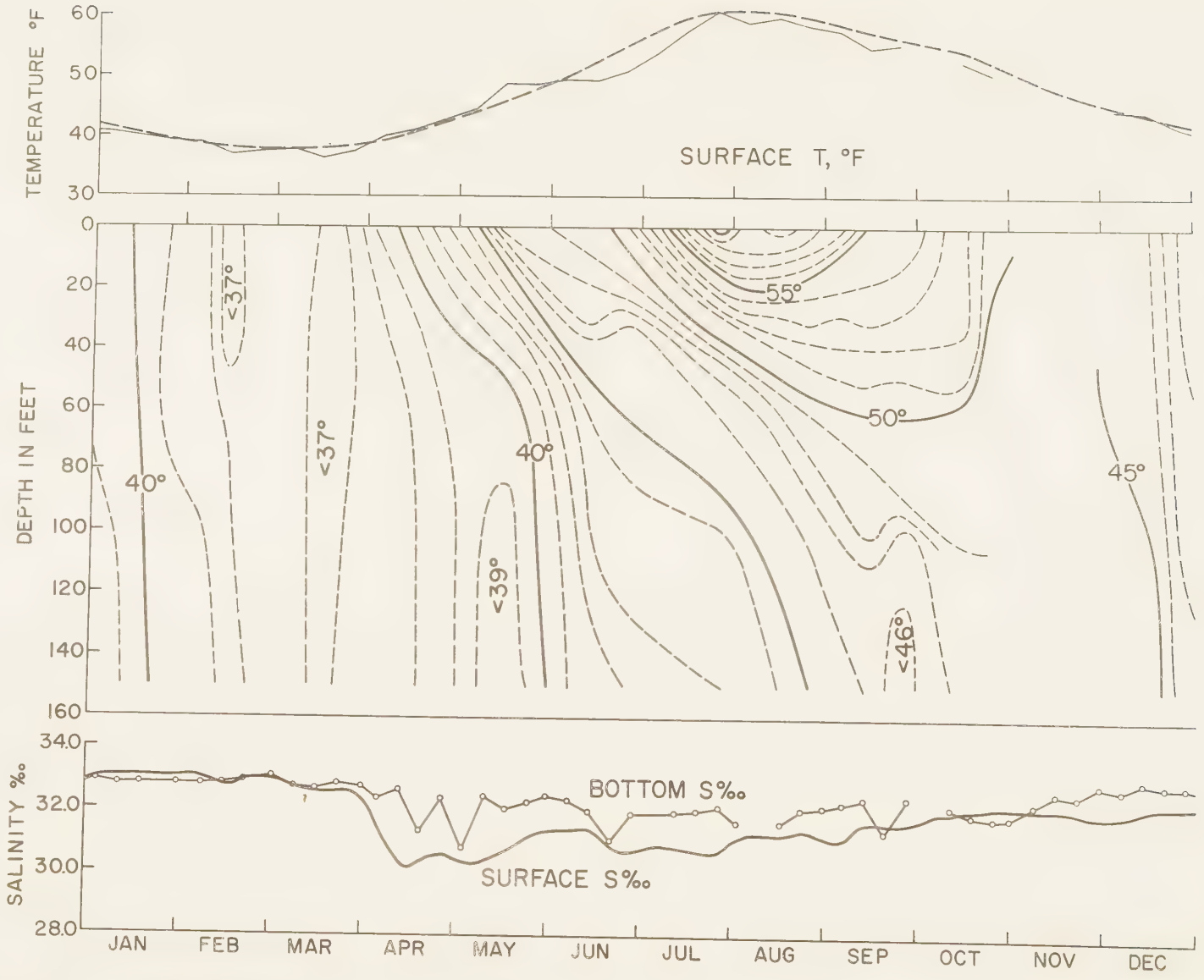

Figure 3. Portland Lightship, 1959. (Dashed line in upper diagram, mean for period 1947-1956.)

Table 3

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

January 1959

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	41.1	41.2	41.6	42.2	42.5	32.86	-
2	45.2	45.5	45.6	45.8	45.9	.91	-
3	42.0	41.9	41.9	42.6	42.7	.90	-
4	39.1	38.0	39.1	42.3	42.8	.43	32.92
5	41.1	41.3	41.3	41.5	41.7	.95	-
6	37.6	37.8	37.8	37.9	38.1	.89	-
7	40.6	40.8	40.8	41.1	41.2	32.95	-
8	-	-	-	-	-	33.11	-
9	39.6	39.7	39.6	39.8	39.9	.00	-
10	38.6	38.7	38.6	39.9	40.8	.52	-
11	38.9	38.9	38.9	39.1	39.1	.03	32.80
12	39.5	39.5	39.6	39.8	39.9	33.00	-
13	39.4	39.9	39.9	40.0	-	32.97	-
14	40.2	40.8	40.8	40.9	40.9	32.92	-
15	40.9	41.0	41.0	41.1	41.9	33.20	-
16	41.2	41.1	40.9	41.2	41.8	.00	-
17	41.9	41.8	41.8	42.0	42.1	33.12	-
18	38.6	38.8	39.0	39.9	-	32.94	32.82
19	38.2	38.3	38.3	38.7	40.2	32.82	-
20	39.2	39.2	39.7	39.9	40.1	33.01	-
21	39.2	39.3	39.3	39.8	39.9	32.86	-
22	39.9	39.5	39.6	39.8	40.0	.90	-
23	39.1	39.1	39.1	39.9	41.1	.91	-
24	39.7	39.6	39.7	39.9	40.2	32.96	-
25	39.2	38.7	39.1	39.4	39.8	33.10	-
26	38.5	38.7	38.7	38.8	38.9	.02	-
27	39.1	38.3	38.2	38.3	38.7	.00	-
28	-	-	-	-	-	33.23	-
29	38.3	38.2	38.3	38.9	39.0	32.93	-
30	38.6	37.9	37.8	38.1	38.4	.98	-
31	38.2	38.4	38.8	39.7	40.0	32.84	-
Mean	39.7	39.7	39.8	40.3	40.7	32.98	-

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

February 1959

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	37.9	38.0	38.0	38.3	39.0	33.03	32.84
2	39.1	39.1	39.2	39.4	39.6	33.03	-
3	37.6	37.7	37.9	39.7	39.9	32.85	-
4	38.2	38.3	38.8	39.2	39.7	33.00	-
5	-	-	-	-	-	32.94	-
6	39.2	39.3	39.3	39.6	39.9	32.94	-
7	39.3	39.9	39.9	40.1	40.8	33.14	-
8	39.9	40.1	40.1	40.1	40.2	.08	32.82
9	38.9	38.9	38.9	39.3	39.9	.04	-
10	39.1	39.0	39.0	39.0	39.0	33.46	-
11	-	-	-	-	-	-	-
12	38.0	38.4	38.2	38.2	38.2	32.95	-
13	35.9	36.0	36.9	37.9	38.4	.66	-
14	36.7	36.6	36.6	38.7	39.2	.77	-
15	36.6	36.4	36.6	38.7	39.2	.77	32.84
16	37.2	37.0	37.1	37.3	37.7	.82	-
17	37.0	35.9	36.2	39.2	39.9	.72	-
18	36.0	36.3	36.7	37.7	39.3	.75	-
19	37.9	37.9	38.0	38.0	38.0	.69	-
20	36.9	36.9	37.5	38.8	39.2	.57	-
21	-	-	-	-	-	.98	-
22	37.1	37.1	37.1	37.9	38.2	.95	32.95
23	36.9	36.9	36.9	37.0	37.7	32.98	-
24	38.0	38.0	38.1	38.2	38.4	33.03	-
25	37.2	37.1	37.2	37.3	37.4	33.00	-
26	37.6	37.0	37.0	37.4	37.8	32.93	-
27	37.7	37.4	37.5	37.5	37.6	33.08	-
28	37.1	37.0	36.8	36.8	36.9	33.09	-
Mean	37.7	37.7	37.8	38.5	38.8	32.94	32.86

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

March 1959

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	38.5	38.5	38.5	38.6	38.9	32.88	33.08
2	38.2	38.3	38.2	38.3	38.3	.97	-
3	38.2	38.0	38.1	38.2	38.5	.94	-
4	37.9	38.0	38.0	38.1	38.2	.89	-
5	38.0	37.6	37.7	38.2	38.4	.31	-
6	-	-	-	-	-	32.92	-
7	36.0	35.2	35.3	36.2	36.8	33.07	-
8	38.0	37.7	37.7	-	-	32.85	32.73
9	37.3	37.2	37.2	37.2	37.5	32.80	-
10	36.0	36.0	35.8	35.8	35.9	33.03	-
11	35.8	35.3	35.4	35.6	35.9	32.39	-
12	-	-	-	-	-	-	-
13	36.0	36.1	36.0	36.1	36.2	33.02	-
14	36.0	36.0	36.0	36.2	36.3	32.49	-
15	36.5	36.2	36.1	36.3	36.8	.57	32.67
16	35.5	35.0	35.0	35.2	35.5	.47	-
17	36.2	36.2	36.5	36.8	36.9	.51	-
18	36.8	36.7	36.4	36.7	37.0	.63	-
19	36.1	36.0	36.3	36.9	37.0	.71	-
20	36.5	36.5	36.3	36.6	37.0	.56	-
21	37.0	36.5	36.2	36.5	36.9	.45	-
22	36.9	37.0	37.0	37.4	37.7	.52	32.86
23	36.5	36.7	36.8	37.0	37.8	.71	-
24	37.9	37.0	37.1	37.7	38.3	.78	-
25	37.8	37.2	37.2	37.3	37.7	.66	-
26	38.0	37.0	37.0	37.2	37.6	.64	-
27	37.0	37.2	37.2	37.3	37.5	.73	-
28	37.0	37.0	37.0	37.0	37.0	32.81	-
29	37.1	37.0	37.0	37.0	37.1	33.05	32.76
30	37.0	37.0	37.0	37.3	38.0	32.33	-
31	37.6	37.2	36.8	37.0	37.4	32.47	-
Mean	37.0	36.8	36.8	37.0	37.3	32.71	32.82

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

April 1959

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	38.3	36.2	36.2	36.5	36.9	32.23	-
2	38.1	38.2	37.1	37.0	37.1	.24	-
3	37.8	37.6	37.3	36.9	37.0	32.10	-
4	41.1	38.1	37.9	37.4	37.4	31.85	-
5	39.7	38.7	37.8	37.3	37.3	32.03	32.34
6	38.9	38.1	37.2	37.2	37.3	30.61	-
7	39.9	38.7	37.9	38.0	38.0	31.74	-
8	40.4	38.7	37.8	37.9	38.0	31.85	-
9	41.8	37.9	37.3	37.8	37.9	30.03	-
10	40.8	38.0	37.7	37.6	37.8	31.32	-
11	39.9	38.9	38.0	37.8	37.8	29.47	-
12	40.4	37.4	37.2	37.4	37.6	-	32.66
13	40.0	39.1	38.2	38.0	38.0	30.73	-
14	41.2	38.8	38.0	37.9	37.9	29.32	-
15	42.0	39.7	38.0	37.9	37.9	29.93	-
16	40.6	38.6	38.4	37.5	37.3	31.45	-
17	41.9	38.4	38.2	37.9	37.0	29.77	-
18	41.0	38.4	37.7	37.8	37.5	.49	-
19	-	-	-	-	-	29.11	31.31
20	40.7	40.5	39.8	37.5	-	31.67	-
21	40.8	38.4	36.1	36.2	36.1	31.82	-
22	43.5	39.2	38.5	38.4	38.7	28.93	-
23	45.2	40.2	39.0	38.2	38.4	29.26	-
24	43.1	40.1	40.3	38.7	38.9	30.54	-
25	44.3	40.1	40.0	39.9	39.9	27.80	-
26	43.9	40.2	39.6	39.3	39.3	30.68	32.39
27	43.1	40.5	39.7	39.5	39.5	30.24	-
28	41.8	40.5	39.1	38.9	39.0	31.79	-
29	41.4	41.8	41.2	39.6	39.4	31.72	-
30	40.1	40.3	40.3	40.2	40.2	32.58	-
Mean	41.1	39.0	38.3	38.0	38.0	30.77	32.18

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

May 1959

Day	Temperature °F					Salinity °/oo	
Depth	0'	30'	50'	100'	150'	0'	150'
1	40.0	40.0	40.0	40.0	40.0	32.25	-
2	43.5	39.7	39.0	39.1	39.1	31.32	-
3	43.4	41.2	40.1	39.9	39.9	30.33	30.79
4	43.3	40.8	40.2	40.0	40.1	29.23	-
5	43.1	39.5	39.1	38.6	38.5	29.32	-
6	44.2	39.4	38.9	38.5	38.5	30.18	-
7	44.4	40.4	39.1	38.5	38.6	29.97	-
8	44.8	43.4	38.5	38.5	-	29.98	-
9	46.1	41.6	38.9	38.7	38.7	30.11	-
10	50.1	44.2	39.8	38.9	38.9	29.84	32.43
11	45.6	42.5	39.8	38.8	38.7	30.64	-
12	48.5	43.3	39.5	38.8	38.5	.02	-
13	52.0	40.4	39.9	38.7	38.4	30.42	-
14	-	-	-	-	-	29.99	-
15	49.2	42.8	39.6	38.7	38.6	30.46	-
16	48.0	41.8	40.1	38.2	38.1	.48	-
17	-	-	-	-	-	.10	32.06
18	-	-	-	-	-	30.82	-
19	47.9	41.2	39.9	38.6	38.4	31.15	-
20	-	-	-	-	-	.44	-
21	47.9	43.3	41.6	39.1	38.9	.62	-
22	51.1	42.0	40.0	39.1	39.0	.43	-
23	48.2	43.0	40.3	39.1	39.0	.08	-
24	47.1	44.4	40.4	39.0	-	31.08	32.25
25	48.4	43.6	40.9	39.4	39.0	30.81	-
26	46.6	42.0	41.1	39.3	39.0	31.37	-
27	47.9	42.9	41.2	39.6	39.1	.50	-
28	45.4	42.0	40.9	39.4	39.2	.70	-
29	49.7	49.1	46.9	40.3	39.8	.27	-
30	50.2	46.7	44.1	40.9	40.1	31.13	-
31	50.0	46.0	42.6	40.4	38.9	30.99	32.45
Mean	46.9	42.5	40.5	39.2	39.0	30.71	32.00

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Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

June 1959

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	49.8	47.5	44.2	40.4	40.1	31.48	-
2	50.2	47.2	41.8	40.0	-	30.80	-
3	48.2	42.8	41.6	40.5	40.1	31.81	-
4	48.3	45.0	42.4	41.2	40.9	.76	-
5	51.4	44.0	42.7	41.4	40.7	31.14	-
6	52.8	46.9	45.6	41.0	40.0	-	-
7	48.2	48.6	44.4	42.1	40.9	30.10	32.32
8	48.2	47.8	45.3	42.7	41.7	31.73	-
9	47.4	46.8	44.5	42.6	41.0	32.05	-
10	48.3	45.8	45.0	43.7	41.5	31.69	-
11	48.2	46.0	46.0	43.4	39.8	.66	-
12	51.0	46.7	45.4	43.6	40.2	.29	-
13	51.2	49.7	45.5	43.0	40.0	.18	-
14	50.6	47.3	45.1	41.7	-	.37	32.00
15	50.0	49.2	45.0	41.2	40.8	.33	-
16	50.8	49.3	47.3	43.2	41.0	.50	-
17	48.1	47.9	47.9	43.5	42.2	.69	-
18	46.6	45.5	45.2	44.1	42.6	.98	-
19	46.5	46.3	45.6	44.4	43.6	31.59	-
20	49.0	45.1	45.0	44.4	43.5	30.51	-
21	52.2	45.9	44.5	43.8	43.6	-	31.08
22	-	-	-	-	-	30.85	-
23	52.2	45.7	45.1	44.7	41.0	30.48	-
24	50.8	46.2	46.0	45.0	41.2	-	-
25	50.2	46.5	46.0	44.6	41.1	-	-
26	52.0	47.0	45.8	43.0	41.4	-	-
27	50.0	45.7	44.8	42.5	41.6	30.73	-
28	-	-	-	-	-	31.30	31.91
29	48.2	44.8	45.5	43.1	42.7	-	-
30	51.0	46.8	45.3	44.0	43.4	30.06	-
Mean	49.7	46.6	44.9	42.8	41.4	31.25	31.83

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

July 1959

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	50.9	47.3	46.3	44.3	43.3	30.56	-
2	52.0	46.0	44.9	44.7	42.7	-	-
3	-	-	46.6	43.6	42.3	-	-
4	53.4	46.8	45.9	42.8	42.0	-	-
5	54.8	49.1	46.9	43.0	42.3	30.50	-
6	52.8	50.4	45.2	42.9	41.9	-	-
7	53.2	49.0	44.3	43.1	42.1	31.11	-
8	53.9	49.0	44.8	42.4	42.1	31.08	-
9	57.8	47.2	44.1	42.4	42.0	30.93	-
10	55.0	46.2	45.0	42.8	42.2	31.04	-
11	55.8	46.8	44.7	42.9	42.1	30.91	-
12	56.8	48.2	45.0	43.3	42.9	.80	31.98
13	56.6	50.8	46.2	43.1	43.0	.98	-
14	59.0	52.8	51.2	43.3	42.9	.61	-
15	59.3	51.1	45.6	43.6	43.1	30.49	-
16	57.4	50.9	45.9	43.9	43.2	-	-
17	59.9	53.9	45.7	43.9	43.1	30.27	-
18	60.5	49.1	45.2	43.5	43.0	30.84	-
19	55.4	46.8	45.7	44.0	43.2	31.13	32.01
20	55.2	49.7	45.2	43.8	42.8	31.03	-
21	58.1	49.9	44.9	43.1	42.7	30.29	-
22	59.8	54.0	46.8	43.3	42.2	.51	-
23	-	46.5	44.4	43.2	42.2	30.90	-
24	61.0	50.2	45.2	44.1	42.9	31.59	-
25	60.3	49.0	46.2	43.8	41.8	31.10	-
26	59.1	50.5	47.8	43.8	42.8	30.17	32.12
27	60.0	49.8	48.1	44.4	43.4	.76	-
28	60.9	52.0	47.1	44.4	43.4	.10	-
29	65.1	50.0	47.1	44.0	43.0	30.24	-
30	63.8	51.1	47.5	44.5	43.1	-	-
31	60.3	51.2	46.9	44.2	43.2	30.90	-
Mean	57.5	49.5	46.0	43.6	42.7	30.75	-

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

August 1959

Depth / Day	Temperature °F 0'	30'	50'	100'	150'	Salinity °/oo 0'	150'
1	58.5	52.6	46.7	44.8	43.4	31.22	-
2	58.9	53.8	49.5	45.3	43.6	30.88	31.68
3	57.8	51.5	46.3	44.8	43.0	.90	-
4	60.1	50.0	46.9	44.5	42.8	30.97	-
5	58.4	51.1	47.9	44.1	43.0	31.03	-
6	60.1	51.1	49.0	44.4	43.1	.51	-
7	59.8	58.8	47.5	44.6	43.0	.68	-
8	59.6	53.7	50.3	44.4	43.1	.34	-
9	-	-	-	-	-	.28	-
10	56.0	50.9	48.2	45.0	44.0	.79	-
11	57.7	56.1	52.0	45.8	44.0	.45	-
12	58.0	54.1	50.6	46.0	44.1	.53	-
13	58.2	53.0	51.0	45.3	43.6	.22	-
14	56.8	52.2	50.0	45.7	44.4	.19	-
15	60.6	53.8	50.8	45.0	44.0	31.06	-
16	61.6	52.2	50.1	46.2	44.2	30.93	31.66
17	62.8	50.5	49.2	45.5	44.5	30.91	-
18	57.4	49.4	48.4	45.4	43.8	31.29	-
19	58.9	49.1	48.3	45.8	44.2	.36	-
20	64.9	51.0	48.8	46.4	43.7	.22	-
21	56.9	49.0	47.9	45.2	44.5	.57	-
22	57.0	49.7	48.5	45.1	44.7	.56	-
23	58.3	55.3	51.2	45.6	44.3	.28	32.08
24	57.2	54.7	49.3	45.3	44.0	.11	-
25	57.1	54.0	55.2	45.9	44.3	.16	-
26	57.3	56.6	50.6	45.8	45.0	.24	-
27	59.3	56.0	50.2	45.8	45.0	.55	-
28	60.0	54.9	50.5	47.2	45.5	.36	-
29	60.8	54.1	52.0	47.1	46.0	.11	-
30	59.4	54.3	51.0	47.1	46.0	.44	32.16
31	58.0	52.8	50.4	47.2	45.8	31.66	-
Mean	58.9	52.9	49.6	45.5	44.2	31.28	31.90

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

September 1959

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	58.1	51.4	50.0	46.8	45.4	31.22	-
2	57.4	51.0	49.8	47.3	45.1	.51	-
3	55.5	50.3	49.5	47.0	46.0	.75	-
4	55.2	50.8	49.7	47.4	46.4	.67	-
5	56.7	54.0	52.6	48.2	45.1	31.54	-
6	56.6	53.3	52.1	47.9	44.9	30.54	32.25
7	56.4	53.0	51.2	47.1	44.1	30.73	-
8	57.8	53.7	51.7	45.9	43.8	31.40	-
9	62.1	54.2	51.5	46.8	43.8	29.32	-
10	58.8	52.3	50.7	47.4	45.3	31.06	-
11	56.2	55.3	50.8	48.1	46.3	31.61	-
12	56.2	55.4	52.3	48.7	47.0	32.28	-
13	56.0	54.2	51.8	47.9	45.9	31.47	32.41
14	56.3	54.5	51.5	48.3	46.8	.33	-
15	53.0	53.2	49.6	48.0	45.6	.76	-
16	53.9	52.9	52.7	49.9	46.9	.91	-
17	53.3	51.8	50.8	48.8	46.9	.43	-
18	53.0	51.6	51.0	48.5	45.6	.48	-
19	54.0	51.3	50.6	47.6	45.2	.76	-
20	53.6	51.8	50.8	48.6	45.6	.40	31.36
21	53.0	51.7	50.6	46.8	44.5	.51	-
22	53.6	51.6	50.6	46.2	44.0	.60	-
23	55.2	52.7	50.5	46.7	45.1	.57	-
24	55.8	51.6	50.5	46.6	45.7	.54	-
25	55.4	52.1	50.6	46.6	45.1	.53	-
26	56.5	54.1	50.8	47.0	45.8	.47	-
27	54.5	54.0	49.8	46.8	45.7	.65	32.45
28	56.3	55.6	50.4	46.8	45.7	.68	-
29	56.7	51.7	49.4	46.8	45.5	.60	-
30	54.9	51.4	48.5	46.1	45.1	31.86	-
Mean	55.7	52.8	50.7	47.4	45.5	31.44	32.12

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

October 1959

Depth / Day	Temperature °F					Salinity °/oo	
	0'	30'	50'	100'	150'	0'	150'
1	54.9	51.2	49.0	46.5	45.2	31.81	-
2	-	-	-	-	-	.86	-
3	-	-	-	-	-	.90	-
4	-	-	-	-	-	31.83	-
5	-	-	-	-	-	32.02	-
6	-	-	-	-	-	31.88	-
7	-	-	-	-	-	31.83	-
8	53.6	53.4	51.2	49.2	48.2	32.02	-
9	52.8	53.0	52.2	50.0	-	.04	-
10	54.0	52.9	52.2	49.2	-	.03	-
11	54.6	54.4	54.0	51.0	47.8	32.12	32.18
12	54.9	54.2	52.0	50.8	-	31.32	-
13	52.8	52.8	51.6	48.6	-	32.33	-
14	53.1	52.9	51.1	50.1	48.9	.17	-
15	52.8	52.4	51.2	49.4	49.2	.10	-
16	49.9	49.8	49.0	47.0	45.2	32.09	-
17	-	-	-	-	-	31.85	-
18	52.8	53.1	51.6	48.5	47.3	31.94	31.94
19	50.3	51.1	50.7	50.0	46.2	32.24	-
20	50.2	50.0	49.8	48.5	46.2	.30	-
21	50.0	49.1	48.5	47.4	45.8	.42	-
22	49.9	49.0	48.2	48.0	46.7	.52	-
23	50.1	48.8	48.5	47.4	46.0	.36	-
24	50.4	49.9	49.7	48.9	47.8	.26	-
25	50.2	49.8	49.7	48.9	47.7	.24	31.82
26	50.2	49.8	49.7	48.9	47.5	.28	-
27	50.3	50.3	50.0	48.7	47.6	.33	-
28	51.1	51.1	51.1	51.1	-	.16	-
29	50.8	50.4	50.2	50.3	49.9	32.00	-
30	50.2	49.8	50.3	50.3	49.8	31.66	-
31	50.3	50.6	50.7	51.1	49.7	31.59	-
Mean	-	-	-	-	-	32.05	

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

November 1959

Depth / Day	Temperature °F 0'	30'	50'	100'	150'	Salinity °/oo 0'	150'
1	50.8	50.7	50.4	50.9	50.6	31.72	31.83
2	50.7	50.8	50.8	50.6	49.2	32.20	-
3	-	50.3	50.1	50.0	49.8	32.25	-
4	50.0	50.0	50.0	49.6	48.5	31.86	-
5	50.3	50.2	50.2	50.0	48.9	32.06	-
6	51.5	51.0	51.0	50.6	48.8	.22	-
7	50.6	51.1	51.1	50.5	49.4	.34	-
8	50.3	50.3	50.4	50.5	49.8	.32	32.26
9						.28	-
10						.29	-
11						32.22	-
12						33.00	-
13						31.95	-
14						.93	-
15						31.92	32.64
16						32.36	-
17						32.36	-
18						31.97	-
19						32.05	-
20						31.98	-
21						32.04	-
22						.04	32.56
23						.11	-
24						32.18	-
25						31.66	-
26						32.54	-
27						-	-
28						-	-
29						32.23	32.94
30						30.81	-
Mean	-	-	-	-	-	32.10	32.45

Table 3 (cont'd)

PORTLAND LIGHTSHIP 43°31.6'N. 70°05.5'W. Depth of water - 150 feet

December 1959

Depth / Day	Temperature °F 0'	30'	50'	100'	150'	Salinity °/oo 0'	150'
1	43.8	43.6	44.7	45.3	45.5	31.79	-
2	43.7	43.7	44.6	45.3	45.5	.81	-
3	43.6	43.9	44.2	45.5	45.5	.79	-
4	43.9	43.6	43.8	45.2	45.4	.91	-
5	43.9	43.5	43.9	45.2	45.2	.97	-
6	44.7	44.3	44.2	44.9	45.1	.98	32.79
7	44.8	44.5	44.5	44.6	44.8	.73	-
8	44.8	44.8	44.9	46.1	46.1	.81	-
9	44.9	44.8	44.9	46.1	46.1	31.81	-
10	46.1	46.1	46.1	46.2	46.1	32.73	-
11	45.8	45.6	45.8	45.8	46.1	.74	-
12	45.0	45.0	45.1	45.2	45.9	.33	-
13	44.9	44.9	45.0	45.1	45.9	.33	33.04
14	44.8	45.0	45.1	45.2	45.9	.33	-
15	44.0	44.0	44.4	45.2	45.6	.00	-
16	44.5	44.2	44.7	46.2	45.9	.10	-
17	44.8	44.8	45.0	46.1	45.9	.41	-
18	44.1	44.2	44.2	45.8	46.0	32.20	-
19	43.3	43.3	43.6	44.4	45.8	31.86	-
20	41.2	41.2	41.2	42.0	43.2	.85	32.90
21	41.9	42.0	42.8	44.0	45.4	31.88	-
22	42.5	42.8	43.0	43.1	44.8	32.00	-
23	40.9	41.7	41.9	42.2	43.1	31.85	-
24	40.8	41.8	42.0	42.5	43.3	31.84	-
25	41.0	41.8	41.6	41.3	41.3	32.56	-
26	-	38.4	39.5	40.8	41.5	.55	-
27	41.1	41.1	41.1	42.0	43.2	32.57	32.91
28	-	-	-	-	-	-	-
29	45.0	45.0	45.2	45.6	45.7	-	-
30	41.2	41.7	41.6	41.5	41.3	32.57	-
31	42.7	44.8	45.0	45.4	45.5	32.57	-
Mean	43.6	43.5	43.8	44.5	44.9	32.13	32.91

Boston Lightship (Figure 4, Table 4)

Winter and spring surface water temperatures were slightly above the mean until mid-June, when the region experienced substantially reduced air temperature anomalies which were reflected in the surface water. Summer surface water temperatures closely follow the weather regimes of July, August and September. The cold weather of July and early August changed abruptly on the 11th and 12th, introducing a record sequence of consecutive hot days. At the end of August the heat moderated briefly, but was followed by a second heat wave with southerly winds; the middle decade in September gave New England air temperatures that were 12°F below normal, and sea water temperatures declined. Nevertheless, the mean surface water temperature for the month was the highest since 1890. Surface temperatures remained above the mean through December.

Bottom water temperatures were low during January, February and March when the water column appeared more thoroughly mixed than in previous years. Mixing again was responsible for the bottom maximum in mid-September when northeast winds on the 15th and 16th briefly stirred the water column. The thermocline was not permanently destroyed until mid-November.

January through March salinities were high in comparison to the three previous years. The minimum, the result of spring runoff, appeared in early May and was followed by a second low reflecting the wet weather of June.

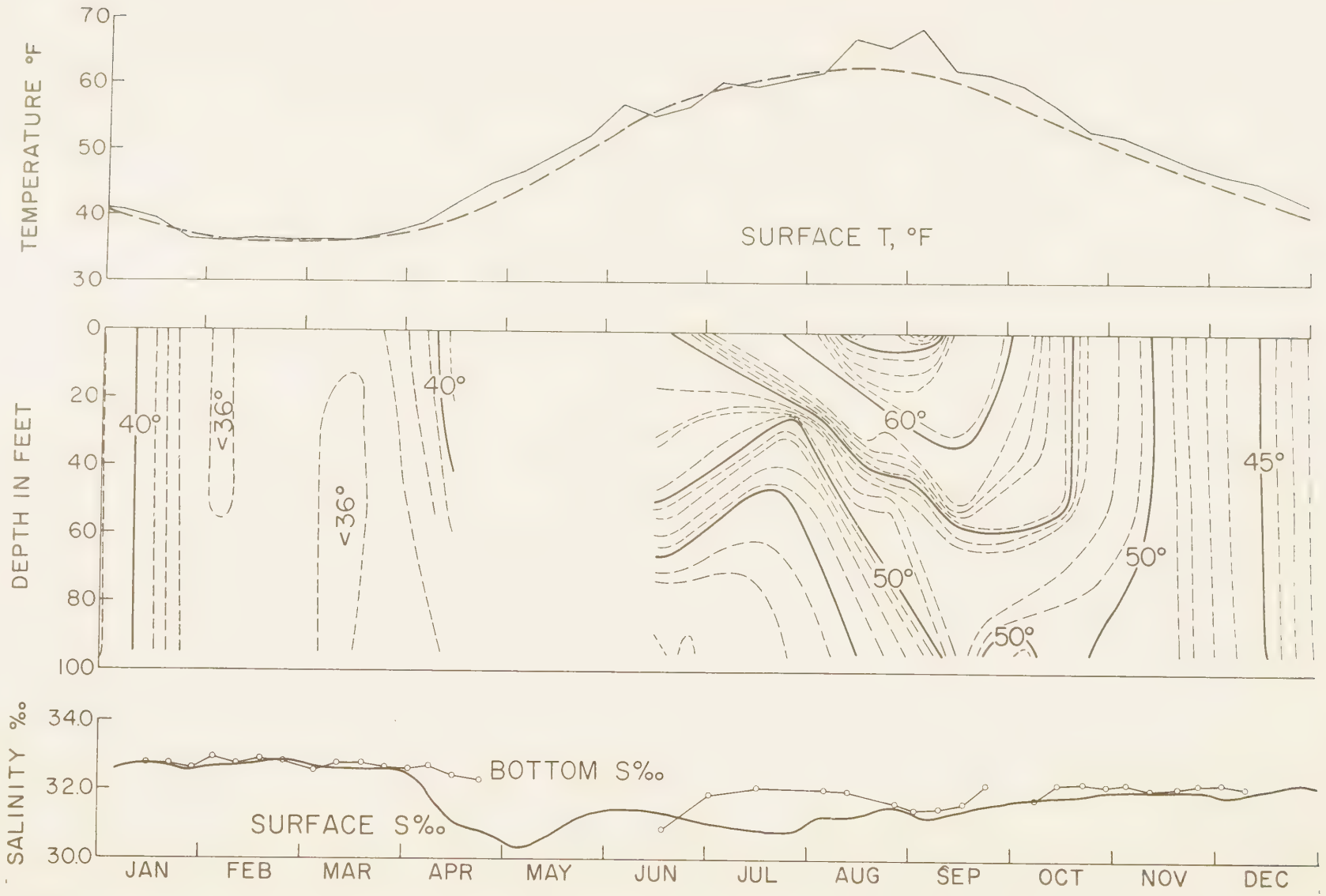

Figure 4. Boston Lightship, 1959. (Dashed line in upper diagram, mean for period 1925-1941.)

Table 4

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1959

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	40.5	40.6	40.8	40.8	32.58	-	35.1	35.2	35.2	-	-	-
2	41.3	41.2	41.3	41.5	.55	-	36.0	35.9	36.0	36.6	32.70	-
3	41.2	41.2	41.2	41.4	.51	-	35.5	35.8	35.7	35.9	.70	-
4	41.0	41.0	40.8	41.0	32.47	-	35.7	35.7	35.9	-	.61	32.96
5	-	-	-	-	-	-	36.0	36.3	36.2	-	.62	-
6	-	-	-	-	-	-	35.9	35.7	35.8	-	.62	-
7	-	-	-	-	-	-	36.1	35.8	36.0	36.0	.73	-
8	-	-	-	-	-	-	36.4	36.5	36.5	36.4	.74	-
9	40.0	40.0	40.1	40.1	32.64	-	-	35.1	35.1	-	.68	-
10	39.6	40.1	40.2	40.2	.73	-	36.1	36.0	35.1	36.1	.77	-
11	39.2	39.2	-	-	.68	-	36.3	-	-	-	.76	32.78
12	40.3	40.1	40.1	40.1	.74	-	36.2	36.1	36.1	-	.77	-
13	40.0	40.1	-	-	.92	-	36.1	36.0	36.1	36.1	.77	-
14	39.2	39.3	39.3	39.3	.75	32.75	36.9	36.9	36.8	-	.80	-
15	39.4	39.1	39.5	39.8	.73	-	37.2	36.5	36.0	-	.76	-
16	40.0	39.0	39.1	39.8	.71	-	36.1	36.7	36.6	36.8	.72	-
17	38.3	39.0	39.0	39.1	.68	-	36.2	35.8	36.1	36.9	.71	-
18	39.1	39.0	39.2	39.2	.73	-	36.9	37.1	36.9	-	32.79	32.90
19	39.0	39.0	-	-	.74	-	-	-	-	-	-	-
20	39.0	39.0	39.0	39.0	.75	-	35.9	35.9	35.9	-	32.77	-
21	36.0	37.7	38.0	38.0	.26	32.72	36.4	36.6	36.7	36.8	.84	-
22	38.0	38.1	38.2	-	.65	-	36.1	36.1	36.1	-	.84	-
23	37.0	37.5	-	-	.63	-	36.1	35.9	35.9	-	32.84	-
24	36.7	36.8	36.7	36.8	.62	-	-	-	-	-	-	-
25	37.1	37.2	37.2	-	.67	-	36.1	36.1	36.1	-	32.84	32.82
26	36.5	36.7	-	-	.64	-	35.8	35.8	35.8	35.8	.88	-
27	35.3	36.0	36.1	36.1	.58	-	35.9	36.1	36.1	36.1	.82	-
28	36.0	36.0	36.0	36.0	.60	32.60	36.1	36.1	36.1	36.1	32.82	-
29	-	-	-	-	.40	-						
30	35.5	35.3	35.3	-	.62	-						
31	35.8	36.0	36.0	36.0	32.62	-						
Mean	38.5	38.6	38.7	-	32.64	-	36.1	36.1	36.0	-	32.76	32.86

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1959

	March						April*					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	35.5	35.7	35.9	35.9	32.76	-	37.7	37.3	37.2	36.2	32.32	-
2	36.9	36.1	35.9	35.8	.80	-	37.3	37.1	36.9	36.2	.32	32.60
3	37.0	36.2	36.1	35.9	.80	-	37.9	37.3	37.0	36.2	.30	-
4	36.0	35.2	35.9	36.1	.54	32.54	37.9	38.1	37.4	36.7	.30	-
5	36.5	36.0	36.0	36.0	32.76	-	38.1	37.8	37.3	36.7	.42	-
6	-	-	-	-	-	-	38.2	38.2	37.3	36.4	.13	-
7	36.5	36.0	36.1	36.1	32.71	-	38.9	38.4	38.3	-	.31	-
8	36.0	35.8	35.9	-	.67	-	39.7	39.1	37.9	36.9	.25	32.69
9	36.0	35.7	36.0	36.3	.70	-	40.1	38.5	37.4	37.0	.14	-
10	35.0	35.9	36.0	36.0	.23	-	39.9	39.1	38.6	37.0	.24	-
11	36.1	36.1	36.1	36.0	32.79	32.79	40.3	38.7	38.2	37.1	.10	-
12	-	-	-	-	-	-	40.3	39.5	38.7	37.3	.10	-
13	-	-	-	-	-	-	39.7	39.6	39.5	37.9	32.10	-
14	35.7	35.2	35.2	-	32.53	-	40.8	39.5	39.5	37.8	31.15	-
15	36.0	35.4	35.5	35.9	.59	-	41.6	41.7	41.6	38.0	29.94	32.41
16	36.0	35.9	35.9	36.1	.49	-	41.9	40.6	40.0	37.0	30.56	-
17	36.0	35.9	36.0	36.0	.53	-	44.1	41.7	39.4	36.9	.44	-
18	36.1	36.0	36.0	36.1	.64	32.75	43.5	41.2	39.0	36.9	.48	-
19	36.0	36.1	36.1	36.1	.64	-	42.6	41.9	38.2	37.0	.52	-
20	36.6	35.8	36.0	36.1	.64	-	42.6	42.3	41.2	37.2	.76	-
21	38.0	36.4	36.2	36.2	.67	-	42.9	42.8	42.2	37.8	30.87	-
22	36.8	36.8	36.8	36.5	.61	-	44.9	42.4	40.0	37.9	31.12	32.29
23	36.2	36.2	36.2	36.0	.66	-	43.2	42.7	41.0	-	31.20	-
24	37.0	36.5	36.4	36.2	.69	-	44.1	42.9	41.7	-	30.66	-
25	38.0	36.7	36.3	-	.74	32.68	46.3	43.7	40.0	-	.48	-
26	-	-	-	-	32.67	-	45.0	42.1	40.0	-	.45	-
27	-	-	-	-	-	-	45				.66	-
28	-	-	-	-	-	-	45				.79	-
29	38.0	35.9	35.8	35.7	32.70	-	44				.78	-
30	36.9	36.2	36.0	36.0	.47	-	45				30.42	-
31	37.0	36.7	36.1	36.0	32.44	-						
Mean	36.5	36.1	36.0	36.0	32.63	32.69	41.6	-	-	-	31.34	32.50

* 27 April - 5 June bucket thermometer readings only.

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1959

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	45				30.81	-	54				31.46	-
2	44				-	-	54				.51	-
3	46				-	-	55				.47	-
4	46				-	-	59				.48	-
5	45				30.16	-	57				.50	-
6	47				.34	-	58.1	57.4	53.3	43.5	.40	-
7	46				.26	-	56.9	55.4	50.9	-	.53	-
8	47				.10	-	59.7	56.6	50.8	44.0	.40	-
9	48				.25	-	55.7	53.8	46.4	39.7	.34	-
10	49				.34	-	56.9	53.6	49.4	40.5	.39	-
11	50				.33	-	56.2	52.7	49.5	40.7	.42	-
12	-				.34	-	57.5	53.2	50.4	40.9	.41	-
13	51				.44	-	57.8	55.0	49.8	39.7	.33	-
14	51				.37	-	56.5	56.3	50.4	39.5	.25	-
15	49				.64	-	52.9	52.8	50.8	38.3	.32	-
16	47				30.96	-	56.8	56.2	52.7	41.9	.46	-
17	47				31.18	-	52.8	52.6	52.5	-	.30	30.83
18	47				.32	-	52.1	51.8	51.5	41.9	.36	-
19	50				.05	-	52.7	51.5	49.5	42.5	.37	-
20	50				31.16	-	53.2	51.9	50.6	43.2	.44	-
21	50				30.84	-	53.6	51.7	48.5	43.2	.29	-
22	50				31.45	-	54.9	50.7	49.5	44.3	.38	-
23	52				.14	-	58.5	50.0	47.7	43.2	.38	-
24	50				.49	-	-	-	-	-	.37	-
25	51				.30	-	-	-	-	-	.17	-
26	51				.38	-	54.4	52.1	48.5	42.8	.20	-
27	52				.36	-	55.5	53.4	47.9	43.3	31.13	-
28	53				.38	-	58.0	49.8	47.3	-	30.55	-
29	54				.39	-	56.5	50.9	47.8	42.6	31.07	-
30	54				.42	-	57.9	49.9	47.5	42.6	30.89	-
31	54				31.34	-						
Mean	49.2	-	-	-	30.88	-	55.9	-	-	-	31.32	-

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1959

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	58.1	56.0	48.1	43.7	31.20	31.88	60.5	46.7	44.7	-	30.97	-
2	59.1	50.3	48.4	43.3	30.74	-	59.8	53.8	45.9	-	31.12	-
3	58.9	52.1	47.7	42.2	.92	-	61.4	48.2	45.2	43.5	.14	-
4	61.0	53.7	46.2	42.8	30.99	-	60.9	47.3	45.2	43.5	.14	-
5	60.1	53.9	47.1	42.0	-	-	58.8	48.0	45.6	43.3	.12	32.00
6	59.8	51.7	46.8	42.3	30.83	-	61.4	53.4	47.0	43.8	.34	-
7	60.1	50.0	45.7	42.1	30.85	-	61.5	54.0	47.2	44.0	.35	-
8	59.6	50.0	45.6	42.0	31.03	-	62.8	55.7	48.0	44.0	.36	-
9	61.8	51.9	45.6	42.0	.00	-	63.4	55.0	47.8	43.9	.29	-
10	60.1	49.1	44.7	42.2	31.07	-	-	-	-	-	.30	-
11	58.2	54.2	44.2	42.8	30.92	-	65.0	61.1	52.1	45.1	.35	-
12	57.8	47.2	44.0	42.8	31.01	-	64.8	60.7	50.2	45.0	.23	31.99
13	55.8	53.6	45.0	42.2	.07	-	65.3	62.8	56.8	45.2	.27	-
14	59.7	49.0	43.1	42.2	31.08	-	65.8	55.2	51.3	44.3	.22	-
15	58.0	50.3	43.7	42.3	30.75	32.05	65.1	62.8	50.8	45.1	.17	-
16	59.8	53.0	43.6	42.9	.61	-	67.3	56.8	50.8	44.5	.12	-
17	61.9	53.7	44.7	42.8	.66	-	66.5	57.3	50.0	44.1	.15	-
18	61.1	-	47.0	42.2	.77	-	67.3	60.6	51.3	45.8	.17	-
19	61.2	49.0	44.5	42.8	.79	-	70.3	62.1	54.0	-	.23	-
20	59.0	45.1	43.9	42.8	.64	-	68.7	58.6	51.2	46.0	.32	-
21	60.0	48.1	44.0	42.9	30.36	-	65.0	55.2	48.7	46.3	.36	-
22	59.2	50.2	44.7	-	-	-	66.4	55.7	48.8	-	.38	-
23	61.9	47.2	44.0	43.0	30.55	-	62.9	56.4	49.8	46.9	.59	-
24	58.6	48.5	44.0	43.1	.79	-	64.8	60.6	52.1	46.9	.51	-
25	58.0	48.6	45.7	42.8	.76	-	63.4	60.1	53.7	45.8	.51	-
26	60.4	47.2	44.4	43.0	.76	-	65.8	61.0	54.0	45.5	.45	31.64
27	60.8	49.0	44.8	43.1	.89	-	63.8	59.5	53.0	45.9	31.49	-
28	61.8	48.0	43.1	43.0	.90	-	65.1	59.3	51.0	-	32.16	-
29	60.4	46.1	43.9	43.1	.88	-	65.8	57.8	50.2	46.4	31.41	-
30	61.4	47.1	44.1	43.1	.87	-	65.9	61.8	52.6	46.2	.33	-
31	60.7	49.0	45.3	-	30.88	-	67.5	58.0	47.8	46.3	31.38	-
Mean	59.8	50.1	45.1	42.7	30.85	-	64.4	56.8	49.9	45.1	31.32	-

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1959

Depth / Day	September Temperature °F 0'	30'	50'	95'	September Salinity °/oo 0'	95'	October Temperature °F 0'	30'	50'	95'	October Salinity °/oo 0'	95'
1	68.9	59.7	52.2	46.4	31.41	-	61.0	58.2	54.0	-	31.76	-
2	69.2	58.0	49.3	46.8	.41	31.42	60.1	59.9	57.8	-	.75	-
3	68.0	60.1	51.1	47.1	.37	-	60.0	59.9	55.4	-	.72	-
4	69.0	59.3	50.3	47.2	.27	-	60.1	57.8	52.8	47.6	.75	-
5	67.4	59.2	52.1	47.5	.28	-	59.8	57.8	54.1	48.5	.80	-
6	69.6	58.5	52.8	48.0	31.00	-	58.8	58.5	56.8	47.2	.70	-
7	67.8	60.4	55.5	49.2	30.96	-	58.1	58.0	57.7	-	.73	31.73
8	66.8	61.0	58.3	49.2	31.16	-	58.9	58.8	58.2	49.2	.81	-
9	68.8	65.0	58.4	48.8	.14	31.49	58.9	58.3	57.8	50.0	.72	-
10	67.2	65.6	58.0	49.7	.27	-	58.9	58.1	57.1	50.2	.72	-
11	66.2	65.2	55.1	48.7	.29	-	58.9	58.3	57.9	50.6	.74	-
12	64.8	64.3	64.1	50.9	.36	-	58.8	58.2	57.8	50.5	.77	-
13	64.8	63.7	62.9	50.9	.36	-	57.0	57.0	57.0	50.2	.83	-
14	64.1	64.1	63.8	49.8	.38	-	57.0	56.9	56.8	49.9	.82	32.21
15	63.2	62.9	60.0	49.5	.38	-	56.5	56.3	56.2	50.2	.85	-
16	58.7	58.6	58.4	55.7	.56	31.61	54.1	54.1	54.0	50.0	.80	-
17	59.9	59.9	59.7	55.7	.59	-	56.5	56.3	56.2	49.2	.82	-
18	59.8	59.2	59.0	-	.48	-	56.3	56.1	56.0	-	.83	-
19	57.9	57.5	57.3	56.1	.54	-	53.9	53.9	53.8	53.3	.98	-
20	59.9	59.2	58.7	55.8	.49	-	56.3	56.1	56.0	-	.92	-
21	60.7	59.2	58.8	53.0	.55	-	53.9	53.8	53.5	52.0	31.98	32.25
22	61.2	60.0	58.0	50.3	.62	-	52.2	52.1	52.1	50.0	32.09	-
23	-	-	-	-	.52	32.20	53.7	52.9	52.3	49.9	31.88	-
24	61.2	60.1	57.0	49.1	.52	-	-	-	-	-	-	-
25	61.1	58.9	56.8	48.7	.55	-	53.2	52.6	52.2	52.0	31.87	-
26	60.1	59.0	56.0	48.0	.61	-	54.0	52.8	52.2	49.1	.98	-
27	61.1	59.5	55.6	48.1	.64	-	52.9	52.9	52.2	-	.94	-
28	61.7	55.6	54.1	-	.64	-	52.1	52.1	52.0	48.2	.96	32.13
29	61.7	60.1	54.6	-	.70	-	52.4	52.2	52.1	48.0	.98	-
30	61.6	59.3	53.6	47.4	31.81	-	52.1	52.1	52.1	49.5	.99	-
31							51.9	51.9	51.7	49.2	31.95	-
Mean	63.9	60.4	56.6	49.9	31.43	31.68	56.3	55.8	54.9	49.8	31.85	32.08

Table 4 (cont'd)

BOSTON LIGHTSHIP 42°20.4'N. 70°45.5'W. Depth of water - 96 feet

1959

Depth / Day	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	53.3	53.1	53.1	50.9	31.98	-	46.9	46.9	46.9	46.9	32.07	-
2	52.5	52.3	52.2	51.3	32.02	-	47.1	46.9	46.9	46.9	32.08	32.21
3	51.9	51.9	51.8	51.7	.04	-	45.8	45.9	46.2	47.0	31.80	-
4	51.9	51.4	51.2	47.7	.00	32.22	46.4	46.2	46.2	45.5	-	-
5	51.8	51.6	51.4	48.2	32.02	-	45.8	46.1	46.1	46.2	31.59	-
6	51.7	51.4	51.3	47.8	31.95	-	45.5	45.5	46.0	46.8	31.78	-
7	51.8	51.8	51.7	48.2	31.94	-	-	-	-	-	-	-
8	-	-	-	-	32.06	-	46.0	46.0	46.0	46.1	-	-
9	51.1	51.1	51.0	50.2	.08	-	45.2	45.2	45.3	46.2	31.97	32.12
10	50.8	50.7	50.7	50.2	.09	-	45.1	45.1	45.2	-	.92	-
11	50.9	50.6	50.5	50.6	32.10	32.09	45.1	45.0	45.7	45.9	31.92	-
12	50.3	50.2	50.3	49.9	31.96	-	-	-	-	-	32.06	-
13	50.3	50.2	50.2	50.1	32.08	-	44.9	45.2	45.3	46.1	31.62	-
14	51.0	50.6	50.4	50.2	.05	-	45.4	45.3	45.2	45.2	32.09	-
15	50.3	50.3	50.3	50.2	.04	-	-	-	-	-	.11	-
16	-	-	-	-	.12	-	45.8	44.9	44.9	45.3	32.04	-
17	49.8	49.8	49.8	49.8	.11	-	-	-	-	-	31.98	-
18	49.2	49.1	49.1	49.1	.10	32.10	-	-	-	-	32.03	-
19	48.4	48.3	48.3	48.5	.11	-	44.8	44.5	44.4	44.3	.05	-
20	48.0	48.0	48.0	48.0	.08	-	44.2	44.3	44.2	-	32.29	-
21	48.5	47.8	47.9	48.5	.11	-	-	-	-	-	-	-
22	48.0	48.0	48.1	48.2	.18	-	-	-	-	-	-	-
23	48.0	48.1	48.1	-	32.18	-	43.1	43.1	43.1	43.1	32.30	-
24	47.0	47.2	47.9	-	31.93	-	42.8	42.7	42.6	42.8	.51	-
25	47.2	47.2	47.2	47.8	31.85	32.20	-	-	-	-	.30	-
26	47.3	47.3	47.3	47.3	32.01	-	-	-	-	-	.34	-
27	47.2	47.1	47.2	47.5	31.99	-	42.8	42.7	42.7	42.7	.26	-
28	48.3	47.6	47.5	47.3	32.02	-	43.0	42.9	42.9	43.1	32.20	-
29	47.8	47.8	47.8	47.8	.00	-	-	-	-	-	-	-
30	46.7	46.8	46.8	46.8	32.05	-	43.2	42.8	42.7	42.0	32.14	32.14
31							42.2	42.2	42.2	42.1	32.22	-
Mean	49.7	49.5	49.5	49.0	32.04	32.15	44.8	44.7	44.8	45.0	32.07	-

Georges Shoal, Texas Tower #2 (Figure 5, Table 5)

Except for early February, the winter surface water temperatures were substantially below those of 1957 and 1958 until April, when rapid warming through May and into June produced readings higher than those for the previous three years. The maximum occurred in early October, later than in any previous year, and one month later than at other stations. The reason for this lag is not apparent. The subsequent cooling was rapid; November and the last ten days of December were the lowest observed so far at this station.

What few data there are for comparison indicate that salinity in 1959 was relatively high. During September readings were 0.5°/₀₀ higher than those for 1958. Low readings seem to extend throughout the summer, followed by rising values in November.

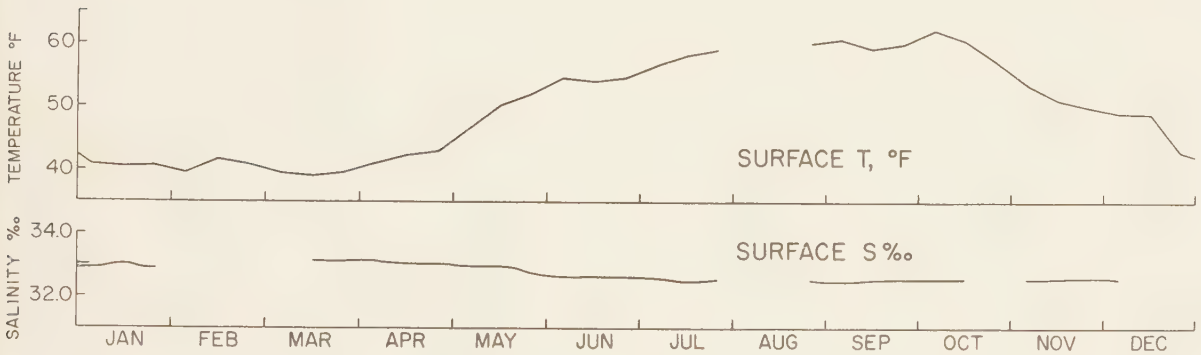

Figure 5. Georges Shoal, Texas Tower #2, 1959.

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Table 5

TEXAS TOWER #2, GEORGES SHOALS 1959

Month / Day	January		February		March		April	
	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo
1	43.0	32.91	39.7	-	41.0	-	40.2	33.10
2	42.0	.76	37.8	-	39.8	-	40.3	-
3	42.0	.92	36.6	-	39.6	-	40.2	32.99
4	42.1	32.80	39.1	-	39.3	-	40.6	33.09
5	42.0	-	40.3	-	39.2	-	40.7	.05
6	40.6	-	40.7	-	39.3	-	40.8	.06
7	39.9	-	40.3	-	39.2	-	41.1	.19
8	39.3	33.01	40.6	-	39.1	-	41.3	.06
9	38.9	32.93	40.1	-	39.1	-	41.8	.36
10	39.4	32.98	40.5	-	38.4	-	42.6	.06
11	39.2	33.07	40.4	-	38.2	33.08	43.2	.00
12	39.6	.07	40.6	-	38.1	.07	43.0	.04
13	40.0	.08	42.4	-	38.1	.07	42.6	.04
14	39.8	.05	43.0	-	38.1	.07	41.7	.04
15	40.1	.08	42.8	-	38.4	.08	41.7	.03
16	41.0	33.28	42.4	-	39.4	.26	42.2	33.04
17	41.3	32.92	42.6	-	39.7	.27	42.1	32.98
18	41.2	.81	41.4	-	39.9	33.15	42.3	.98
19	41.3	32.73	41.1	-	39.9	-	42.6	32.99
20	41.3	33.08	40.3	-	40.1	-	42.9	33.05
21	41.5	32.99	40.2	-	40.3	33.14	42.7	.00
22	41.8	.76	40.0	-	40.2	.06	43.2	.05
23	41.5	.94	40.3	-	39.3	.19	42.6	.03
24	40.4	32.64	40.8	-	39.3	.06	42.7	.01
25	40.4	33.08	41.0	-	39.4	.22	42.8	.31
26	40.0	-	41.5	-	39.7	.20	43.2	33.15
27	39.2	33.06	41.9	-	40.0	.00	43.3	32.94
28	40.0	32.99	41.7	-	39.4	.09	43.4	.96
29	40.4	33.00			39.0	.05	42.6	.95
30	40.6	32.66			39.0	.10	43.1	32.97
31	40.6				39.7	33.10		
Mean	40.7	32.95	40.7	-	39.3	-	42.1	33.05

Table 5 (cont'd)

TEXAS TOWER #2, GEORGES SHOALS 1959

Month / Day	May		June		July		August	
	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo
1	43.5	32.95	53.5	32.68	56.1	32.59	59.5	32.53
2	43.8	.98	54.6	.76	55.8	.58	59.7	32.55
3	44.8	.96	55.0	.37	55.8	.65	60.4	-
4	45.1	.98	55.0	.67	55.9	.59	-	-
5	46.6	32.89	54.7	.65	56.8	.57	-	-
6	47.3	33.02	54.4	.63	56.5	.58	-	-
7	47.7	32.98	54.4	.64	56.7	.55	-	-
8	48.0	32.98	54.8	.63	57.2	.50	-	-
9	48.2	33.01	55.0	.62	57.2	.63	-	-
10	48.9	32.99	54.1	.62	57.7	.63	-	-
11	48.9	32.99	53.9	.66	58.5	.61	-	-
12	50.2	33.03	54.2	.65	59.6	.55	-	-
13	51.4	33.09	54.9	.68	59.8	.50	-	-
14	51.6	32.89	54.7	.67	58.7	.43	-	-
15	50.6	.90	53.6	.62	58.4	.44	-	-
16	50.8	.89	53.7	.61	58.1	.36	-	-
17	49.4	.89	53.9	.66	57.6	.42	-	-
18	48.7	32.90	54.3	.59	57.2	.50	-	-
19	49.7	33.02	53.9	.59	57.4	.49	61.8	32.57
20	50.6	32.92	54.2	.61	57.8	.58	61.6	.58
21	50.9	.88	55.5	.63	58.7	.48	61.5	.48
22	50.2	.89	55.4	.66	59.0	.51	61.0	.46
23	51.1	.93	54.4	.73	59.0	.53	59.7	.47
24	51.0	.90	54.4	.67	59.5	.53	59.4	.63
25	50.6	.74	54.9	32.59	59.6	.55	59.8	.50
26	51.6	.75	54.5	-	59.6	.47	60.0	.45
27	52.4	.70	54.4	32.51	59.2	.50	59.8	.45
28	53.9	.65	54.6	.54	58.5	.50	60.3	.53
29	53.4	.67	54.6	.56	59.0	.50	60.1	.64
30	53.8	.66	54.1	32.63	59.7	.50	60.5	.77
31	54.2	32.66			59.6	32.59	60.4	32.50
Mean	49.6	32.89	54.5	32.63	58.1	32.53	-	-

Table 5 (cont'd)

TEXAS TOWER #2, GEORGES SHOALS 1959

Month / Day	September		October		November		December	
	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo
1	60.5	32.49	61.0	32.58	55.8	32.53	48.2	32.54
2	60.6	.50	60.9	.53	55.0	.54	48.4	.60
3	60.8	.48	60.8	.54	54.6	.55	48.6	.55
4	61.0	.43	61.9	.44	54.3	.55	47.9	32.60
5	60.9	.47	63.7	.54	54.4	.55	47.5	-
6	61.3	.48	64.2	.82	54.3	.57	47.8	32.57
7	60.4	.49	63.9	.53	53.8	.61	51.5	32.54
8	60.7	.49	63.3	32.53	52.3	.62	51.4	-
9	60.8	.46	62.7	-	51.2	.61	50.2	-
10	60.7	32.53	62.8	32.56	51.8	.61	50.0	-
11	60.3	-	62.7	32.55	51.1	.71	50.0	-
12	60.7	32.53	62.9	-	52.0	.57	50.4	-
13	60.2	.48	62.2	32.51	51.8	.54	50.6	-
14	60.4	.52	61.4	.56	52.1	.54	49.8	-
15	59.5	.55	61.5	.55	51.7	.53	49.7	-
16	58.9	.53	61.0	.62	51.6	.45	50.1	-
17	58.7	.55	61.0	.64	51.4	.44	50.0	-
18	59.1	.54	59.7	32.57	51.2	.47	49.5	-
19	58.6	.54	58.6	-	50.6	.47	47.0	-
20	59.0	.58	[illegible]		50.2	.63	44.7	32.70
21	59.1	.5[illegible]	57.4	32.57	50.8	.58	44.2	32.61
22	60.0	.52	57.3	32.60	51.1	.62	43.0	-
[illegible]	[illegible]	[illegible]	57.9	-	51.0	.70	41.4	-
[illegible]	60.0	-	58.3	-	50.6	.63	41.3	32.58
[illegible]	59.8	32.51	58.5	-	50.2	.65	42.7	33.23
[illegible]	59.8	.55	58.2	-	49.9	.63	43.8	32.70
[illegible]	60.0	.52	58.1	-	49.5	.63	43.8	.86
[illegible]	61.0	.50	58.0	-	50.1	.53	43.2	.69
[illegible]	60.9	.48	57.4	-	49.4	.54	43.3	32.70
[illegible]	61.3	32.49	[illegible]	[illegible]	48.1	32.52	43.1	-
[illegible]			56.3	32.52			43.0	32.73
[illegible]	60.2	32.51	60.2	-	51.7	32.57	47.0	-

Nantucket Shoals, Texas Tower #3 (Figure 6, Table 6)

Winter water temperatures of less than 40°F persisted through mid-April. July, August and September were warmer than the same period in 1958. The maximum, greater than 58°F, occurred in early September and was 3 degrees above the maximum for the previous year. Throughout the year, all values were lower at this station than those seen at Georges Shoals, the greatest departures occurring during the summer season.

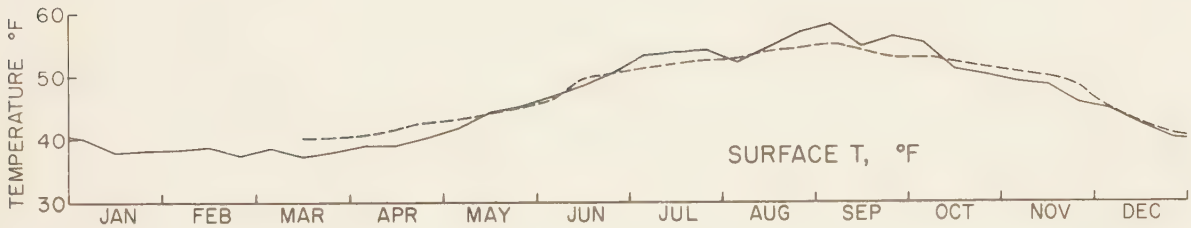

Figure 6. Nantucket Shoals, Texas Towers #3, 1959.

Table 6

TEXAS TOWER #3, NANTUCKET SHOALS 1959 41°00'52"N. 69°29'37"W.

Surface Water Temperature °F

Month / Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1	40.7	38.2	39.0	38.4	40.4	45.6	52.0	54.6	58.4	56.6	51.0	44.7
2	41.6	37.8	38.8	38.4	40.6	46.2	50.6	53.2	58.4	56.4	49.7	45.6
3	41.6	38.3	39.0	38.5	41.8	46.4	50.8	51.6	58.2	55.4	47.8	46.1
4	42.0	38.7	39.0	38.7	42.2	46.2	53.1	52.3	58.0	55.8	48.1	44.4
5	40.4	38.6	39.1	38.9	41.7	46.2	53.6	53.2	58.2	55.8	50.5	44.4
6	38.6	38.4	39.0	39.1	41.9	46.7	54.0	51.2	58.4	55.7	51.1	44.7
7	39.0	37.4	38.8	38.9	41.8	46.9	54.5	51.3	58.0	55.8	49.4	-
8	-	38.5	38.0	39.3	42.4	46.4	54.6	51.9	58.6	55.7	48.3	-
9	38.5	38.1	37.7	39.8	42.9	48.4	54.2	51.3	59.1	53.7	48.1	44.3
10	38.2	38.8	37.6	39.7	42.9	48.9	56.1	51.6	58.0	53.8	47.8	44.2
11	38.0	38.4	37.3	39.8	42.8	47.9	54.6	52.5	55.9	54.2	48.2	44.4
12	37.9	38.1	37.3	39.7	43.2	47.7	54.6	52.3	53.6	53.5	50.4	43.8
13	38.3	39.0	37.1	38.9	43.4	48.1	53.7	52.4	53.7	52.6	49.5	45.5
14	37.9	39.0	36.9	38.8	43.8	47.3	55.1	52.5	53.9	48.7	49.4	41.7
15	38.0	38.8	37.0	37.5	43.8	47.4	53.0	53.4	55.0	47.4	49.7	41.4
16	38.2	39.0	37.2	38.3	44.6	49.0	53.4	55.3	55.8	48.3	-	42.2
17	37.8	39.8	37.4	38.9	45.2	48.6	52.4	56.6	54.2	49.4	48.4	42.2
18	37.6	40.1	37.7	39.2	45.7	49.2	52.7	56.8	54.9	51.7	-	41.8
19	37.2	38.9	37.2	39.4	44.9	49.6	55.1	57.2	55.4	-	46.7	41.7
20	37.5	37.0	38.1	39.9	45.2	50.4	54.8	57.6	55.8	55.0	46.1	39.8
21	38.2	36.3	39.2	39.8	45.4	51.6	55.4	57.7	55.8	-	46.4	39.4
22	38.3	36.4	38.4	39.8	45.1	51.0	53.9	57.0	56.0	47.5	46.4	-
23	37.6	37.5	37.6	40.0	44.6	51.7	55.8	52.8	55.9	50.2	46.4	41.2
24	37.5	37.9	38.2	40.2	43.9	51.8	55.1	53.2	55.4	52.0	46.7	39.8
25	38.4	37.2	38.7	41.2	45.0	50.6	54.3	55.2	56.0	51.5	46.8	40.4
26	37.3	37.9	38.4	41.2	45.6	50.5	53.5	56.4	56.8	52.0	-	40.0
27	37.9	38.0	37.0	41.0	45.6	48.5	52.6	58.0	56.6	51.2	45.5	40.1
28	38.6	38.3	36.4	40.5	45.6	48.6	52.9	58.8	57.1	49.7	45.3	40.4
29	39.3		37.2	40.3	46.5	49.1	53.6	59.6	57.0	49.6	45.0	40.6
30	38.8		38.2	40.1	45.8	52.7	53.8	59.9	56.9	49.6	44.3	40.2
31	38.7		38.9		45.7		54.0	58.7		50.2		40.0
Mean	38.7	38.2	38.0	39.5	43.9	48.6	53.8	54.7	56.5	52.4	47.9	42.3

Woods Hole, Massachusetts (Figure 7, Table 7)

January and February water temperatures were consistently below the mean, giving the coldest winter since 1948. March and April were "normal", May slightly advanced and June retarded. These trends closely parallel the air temperature anomalies. The maximum in early September raised the mean for the month to the 3rd highest on record since 1880. From mid-August through to the end of the year water temperatures were uniformly above the mean, as were air temperatures.

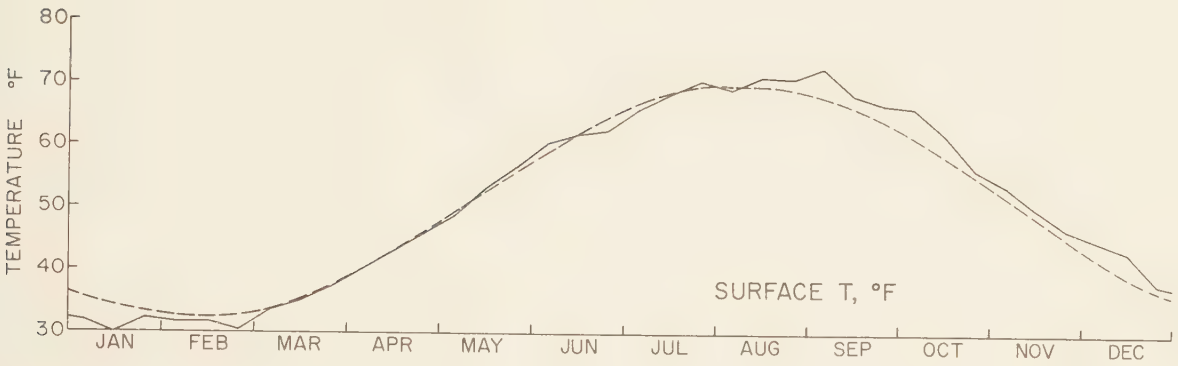

Figure 7. Woods Hole, 1959. (Dashed line, mean for period 1880-1956.)

Table 7

WOODS HOLE, MASSACHUSETTS 41°31'N. 70°40'W.

1959

Surface Temperature °F

Month / Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.9	31.3	30.9	37.8	46.5	58.7	65.0	71.8	72.3	67.9	55.5	45.9
2	33.6	30.0	32.0	37.9	47.5	58.2	64.3	72.0	72.3	67.2	54.9	46.0
3	33.6	31.7	33.0	39.9	48.1	58.2	63.3	70.8	72.4	66.3	53.7	46.0
4	33.8	32.2	34.0	39.6	49.1	60.0	64.9	69.9	72.1	66.2	53.8	45.7
5	32.5	32.7	33.7	41.4	49.2	59.8	66.2	69.2	71.8	67.0	54.2	45.3
6	30.5	32.0	33.0	40.3	49.7	60.1	67.8	67.9	72.9	66.8	55.2	45.2
7	30.5	31.3	34.8	41.4	48.8	62.1	66.9	67.7	73.8	66.3	54.8	45.8
8	30.5	31.9	34.3	42.0	49.4	62.3	68.1	68.8	74.7	66.5	53.9	44.8
9	29.7	30.7	34.4	41.9	49.9	64.1	69.0	68.9	74.2	66.1	52.9	44.9
10	30.5	31.5	34.5	41.3	50.1	63.8	68.9	68.1	73.7	66.4	52.0	44.1
11	29.4	31.5	34.5	41.2	51.1	63.1	68.2	68.2	71.9	66.1	51.9	43.8
12	29.5	30.2	33.7	41.7	52.1	62.8	68.3	70.2	70.9	65.3	52.0	43.9
13	29.5	31.0	33.8	41.9	52.9	63.1	68.6	72.0	70.8	63.9	51.9	45.0
14	29.5	31.4	34.3	41.9	52.8	62.9	68.9	71.5	70.0	63.2	52.2	43.8
15	29.5	31.6	34.6	42.1	53.4	61.0	68.0	72.7	69.1	62.2	52.1	43.1
16	30	31.5	35.8	42.9	53.0	62.0	67.2	72.2	67.9	62.1	50.3	43.8
17	30.0	33.2	35.9	44.2	52.4	61.9	68.7	73.0	67.1	62.0	50.1	43.2
18	30.5	32.5	35.8	44.4	55.3	61.1	69.1	71.8	66.5	61.2	48.7	43.1
19	30	32.5	35.8	44.2	54.9	61.2	70.1	72.5	65.9	59.0	48.1	43.1
20	30.2	31.0	37.9	45.0	55.1	61.9	69.3	72.1	66.0	58.9	47.2	41.9
21	32	30.5	37.8	45.6	55.0	62.1	70.0	72.9	65.9	57.6	47.0	40.3
22	34	30.1	37.5	44.9	56.0	62.1	69.9	71.9	66.0	56.8	47.0	39.2
23	33	29.8	36.8	45.1	55.9	62.6	70.3	71.2	66.3	56.5	46.7	38.0
24	32.4	30.2	37.7	46.6	54.8	63.1	70.4	69.3	66.9	57.0	46.9	37.9
25	32.9	30.0	37.7	46.1	55.3	62.5	70.5	69.1	66.2	57.7	48.2	38.1
26	31.5	30.0	37.6	46.5	56.2	61.8	69.9	70.1	66.9	58.0	46.5	38.0
27	31.5	30.5	37.4	46.0	57.0	62.2	71.4	71.3	67.2	57.2	47.1	37.9
28	31.5	30.8	36.6	46.7	57.9	62.6	71.8	73.8	68.2	56.6	48.2	37.9
29	31.5		36.7	46.9	58.4	63.0	72.9	71.8	69.5	55.6	47.8	38.0
30	32		36.8	46.8	59.1	65.2	70.9	71.0	69.3	55.5	46.0	37.8
31	32.0		37.8		58.9		70.5	71.8		55.2		37.8
Mean	31.3	31.2	35.4	43.1	53.1	61.8	68.7	70.8	69.6	61.8	50.6	42.2

Buzzards Lightship (Figure 8, Table 8)

The winter minimum, less than 35°F, was colder than 1956 and 1957 but above the 1958 minimum. Warming began abruptly in late March and continued until June, when a regression reflected anomalously low air temperatures. The maximum in early September surpassed the highs for the three previous years. Cooling was "normal" compared to earlier years.

Salinity values vary very little at this station and year to year differences are also slight. The 1959 values fell between those of 1957 and 1958 and were closest to those of 1956. The high readings in September reflect the unusually dry conditions which prevailed during that time in the East.

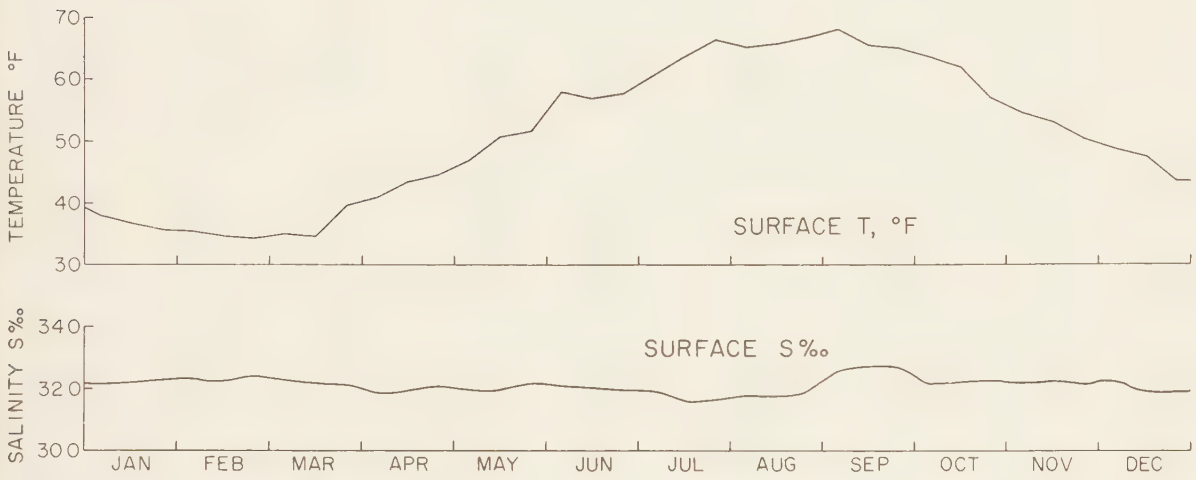

Figure 8. Buzzards Lightship, 1959.

Table 8

BUZZARDS LIGHTSHIP 41°24'00"N. 71°03'00"W. Depth of water - 74 feet

Surface Water - 1959

Month / Day	January		February		March		April	
	T°F	Sal°/oo	T°F	Sal°/oo	T°F	Sal°/oo	T°F	Sal°/oo
1	-	-	34	32.05	36.5	32.38	42	31.89
2	39	32.07	-	.08	34.5	.38	42	31.77
3	37	.01	35	.23	35	.34	43	32.10
4	38	.02	36	.48	35	.34	42	31.85
5	39	.01	36	.32	35	.09	39	.85
6	38	.30	36	.35	35	.48	40	.94
7	38	.15	36	.47	35	.35	40	.80
8	39	.38	37	.49	34.5	.14	40	.83
9	38	.32	35	.32	35	.02	41	31.82
10	36.5	.19	34.5	.17	35	.22	40	32.00
11	37	.24	34.5	.29	35	.22	40	.07
12	37	.19	34	.27	34	.28	42	.07
13	37	.22	34	.24	34	.18	40	32.12
14	37	.24	34	.17	32	32.03	41	31.82
15	37	.14	35	.18	35	31.86	42	.52
16	39	32.11	34	.31	34	32.04	45	.77
17	-	-	34	.10	34	31.98	44	31.70
18	36	32.17	36	.12	35	32.03	48	32.02
19	34	.10	35	.21	36	.98	48	.06
20	37	.30	35	.45	36	.07	44	.02
21	37	.40	35	.54	38	32.02	45	.06
22	37	.26	35	.51	37	31.94	43	.04
23	37	.33	34	.33	37	32.04	43	.06
24	37	.11	34	.33	38	.14	44	.09
25	35	.26	33	.35	39	.02	43	.07
26	35	.21	35	.25	40	.04	44	.07
27	35	.28	35	.40	40	.11	44	.09
28	35	.35	34	32.45	40	32.78	46	.16
29	35	.27			42	-	48	.12
30	35.5	.36			42	31.92	45	32.06
31	35	32.27			43	32.07		
Mean	36.8	32.22	34.8	32.30	36.5	32.18	42.9	31.96

Table 8 (cont'd)

BUZZARDS LIGHTSHIP 41°24'00"N. 71°03'00"W. Depth of water - 74 feet

Surface Water - 1959

Month / Day	May		June		July		August	
	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo
1	45	31.90	56	32.23	59	31.88	69	31.64
2	45	.76	56	.21	59	31.92	68	.78
3	45	.86	57	.10	59	32.00	63	.78
4	46	31.86	57	.12	60	31.90	64	.77
5	46	32.08	58	.08	61	.84	63	.82
6	47	.10	58	32.02	62	.83	64	.78
7	46	.09	59	31.87	62	.85	63	.80
8	51	.08	59	32.04	60	.91	66	.64
9	47	32.19	60	31.91	60	.90	65	.70
10	50	31.77	58	32.03	63	.89	64	.74
11	55	.84	58	.12	60	.91	64	.79
12	52	.87	57	.05	62	.78	66	.56
13	52	.84	56	32.14	63	.70	65	.63
14	49	.94	58	31.80	64	.66	67	.71
15	55	31.73	58	31.97	63	.24	67	.79
16	49	32.04	58	32.03	65	.26	65	.78
17	48	.24	57	.06	67	.61	66	.87
18	49	.02	55	.07	63	.62	66	.73
19	49	.11	55	.10	63	.56	65	.81
20	49	.18	55	.08	63	.57	64	.80
21	50	.21	56	.06	65	.66	67	.83
22	48	.24	55	32.02	65	.50	66	.89
23	49	.22	56	31.90	65	.50	64	.91
24	49	32.26	57	32.00	67	.49	65	.85
25	49	31.86	58	31.96	66	.50	66	.84
26	51	32.20	58	.96	68	.46	65	.85
27	52	.20	58	.93	65	.65	66	.86
28	53	.02	58	.82	66	.81	68	.83
29	55	.08	59	.90	67	.66	68	.88
30	55	.22	60	31.86	68	.67	68	.80
31	55	32.26			65	31.71	68	31.81
Mean	49.7	32.04	57.3	32.01	63.4	31.69	65.6	31.78

Table 8 (cont'd)

BUZZARDS LIGHTSHIP 41°24'00"N. 71°03'00"W. Depth of water - 74 feet

Surface Water - 1959

Month / Day	September		October		November		December	
	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo	T°F	Sal °/oo
1	69	32.55	65	32.14	53	32.17	50	32.10
2	65	.48	64	.12	52	.18	50	.29
3	68	.29	63	.20	55	.19	48	.23
4	68	.67	64	.13	55	.12	48	.51
5	66	.58	63	.15	55	.14	50	.30
6	68	.60	63	.14	55	.26	48	.30
7	70	.43	63	.18	56	.29	48	.30
8	70	.32	63	.14	55	.25	48	.10
9	65	.69	63	.08	54	.12	48	32.04
10	69	.59	63	.14	54	.13	48	31.98
11	70	.65	64	.06	54	.22	48	32.00
12	65	.57	65	.17	54	.25	48	31.97
13	68	.30	63	.21	54	.21	48	31.99
14	65	.83	62	.35	55	.25	48	32.14
15	64	.72	61	.36	54	.26	48	31.93
16	64	.86	62	32.22	53	.26	47	.70
17	64	.67	-	-	53	.24	47	.66
18	65	.62	62	32.10	51	.27	47	.67
19	63	.97	58	.15	51	.28	47	.98
20	64	.82	59	.19	51	.28	46	.96
21	64	.86	58	.32	51	.23	45	31.72
22	64	.57	58	.34	50	.18	45	32.02
23	64	.39	57	.30	50	.34	44	31.90
24	65	.78	57	.06	51	.23	43	.70
25	64	.68	56	.13	51	.14	43	.70
26	64	.76	56	.50	49	.07	44	.79
27	65	.62	58	.41	50	.08	42	.83
28	66	.48	57	32.15	50	.16	43	.98
29	66	.85	-	-	50	.11	43	.92
30	66	32.71	57	32.10	50	32.04	43	.92
31			53	32.17			43	31.90
Mean	65.9	32.63	60.6	32.20	52.5	32.20	46.4	31.98

Kingston, Rhode Island (Figure 9, Table 9)

The record at Kingston parallels those from Woods Hole and Buzzards Lightship to the east as well as the lightship stations to the west. The abrupt rise in temperature from late May to early June was followed by a slight decline in mid-June. The maximum occurred in early September and a relatively warm autumn followed.

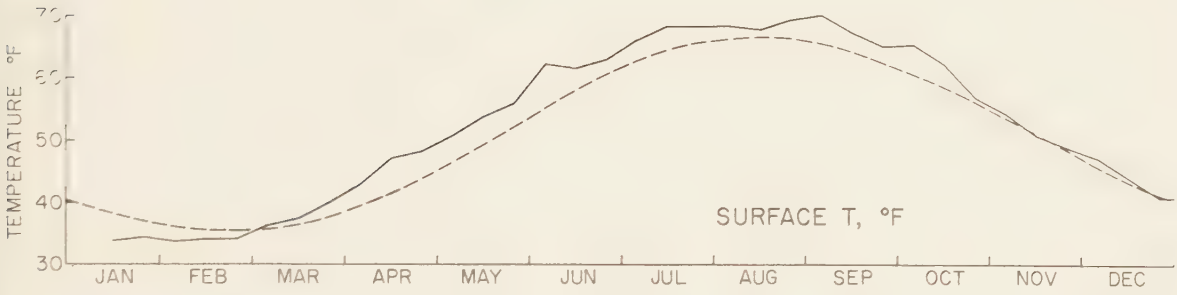

Figure 9. Kingston, R. I., 1959.

Table 9

KINGSTON, RHODE ISLAND
NARRAGANSETT MARINE LABORATORY PIER

41°29'32"N. 71°25'10"W.

1959

Surface Water Temperature °F

Month / Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1	-	-	-	42.8	48.6	62.6	68.0	68.0	68.9	65.7	55.2	48.7
2	-	33.4	35.2	41.0	-	63.0	66.2	68.9	68.9	65.3	54.9	47.8
3	-	33.4	35.6	41.9	-	62.6	67.1	69.8	69.8	64.4	54.7	47.7
4	-	34.2	36.7	-	-	61.7	-	69.8	69.8	65.5	54.5	47.7
5	36.7	35.2	37.0	-	52.7	60.8	-	68.0	70.7	65.5	55.4	46.9
6	-	33.3	37.0	41.5	52.2	-	65.3	67.1	70.7	65.5	56.3	46.9
7	35.2	-	-	42.8	50.0	-	64.8	68.0	70.7	65.3	55.6	46.8
8	35.2	-	-	43.0	50.4	62.4	67.1	68.0	69.8	65.3	53.6	46.8
9	34.3	32.9	37.4	45.0	-	62.6	64.4	68.0	70.7	65.3	51.8	45.9
10	-	34.0	35.8	44.6	-	63.5	64.8	68.0	71.6	65.5	51.1	45.5
11	-	33.6	36.0	-	53.2	63.5	-	67.1	71.6	65.5	51.1	44.6
12	33.4	32.2	-	-	54.0	62.6	-	67.1	69.8	65.3	50.9	44.6
13	34.2	34.5	36.8	45.5	55.4	-	66.2	68.0	68.9	64.0	51.1	45.5
14	34.7	-	-	47.1	55.4	-	67.1	68.0	68.9	63.5	52.0	44.6
15	33.6	-	-	46.8	53.6	60.8	68.0	68.0	68.0	62.6	52.2	43.7
16	34.2	33.4	37.4	47.1	-	62.4	68.9	68.0	66.2	61.7	50.0	43.7
17	-	34.7	38.3	48.6	-	60.4	68.9	68.0	66.2	61.3	50.7	43.7
18	-	34.2	37.8	-	52.3	60.4	68.0	67.1	65.3	60.8	51.1	43.3
19	33.8	32.5	37.8	-	52.7	60.8	68.9	68.0	64.4	59.9	50.0	42.8
20	32.9	32.5	38.3	48.2	53.6	-	68.9	68.9	63.5	58.6	49.6	42.8
21	33.8	-	-	48.2	54.0	-	67.1	68.9	63.5	57.7	49.3	41.9
22	36.1	-	-	48.2	55.0	61.7	66.2	68.9	64.4	57.0	49.1	41.0
23	32.4	-	38.8	47.7	-	62.6	67.1	68.9	64.4	57.2	48.2	40.5
24	-	33.8	39.2	47.3	-	61.9	67.1	68.0	65.3	57.2	47.7	40.1
25	-	34.2	40.3	-	55.4	59.9	66.2	68.0	66.2	57.7	49.3	39.9
26	33.8	34.2	41.0	-	55.4	62.6	68.0	68.9	65.3	57.7	49.1	41.0
27	35.4	34.3	40.6	47.7	55.0	-	69.8	69.8	65.3	56.8	49.1	41.4
28	33.6	-	-	47.7	57.2	-	69.8	69.8	65.3	56.7	50.2	40.8
29	34.2		-	48.2	58.1	64.2	69.8	70.7	65.3	56.3	49.3	40.6
30	36.5		39.2	49.1	-	66.2	69.8	70.7	65.3	55.9	48.2	40.6
31	-		40.6	-	-		69.8	70.7		55.4		41.0
Mean	34.4	33.7	37.9	45.9	53.7	62.2	67.5	68.6	67.5	61.4	51.4	43.8

Ambrose Lightship (Figure 10, Table 10)

The data are sparse, since the vessel was off station in late spring and early fall. During the summer the BT did not function properly below 50 feet so no bottom readings are available. What data there are, however, agree with trends seen at other stations.

Salinity values followed the pattern seen in earlier years. The minimum probably occurred in late April or early May and was not observed.

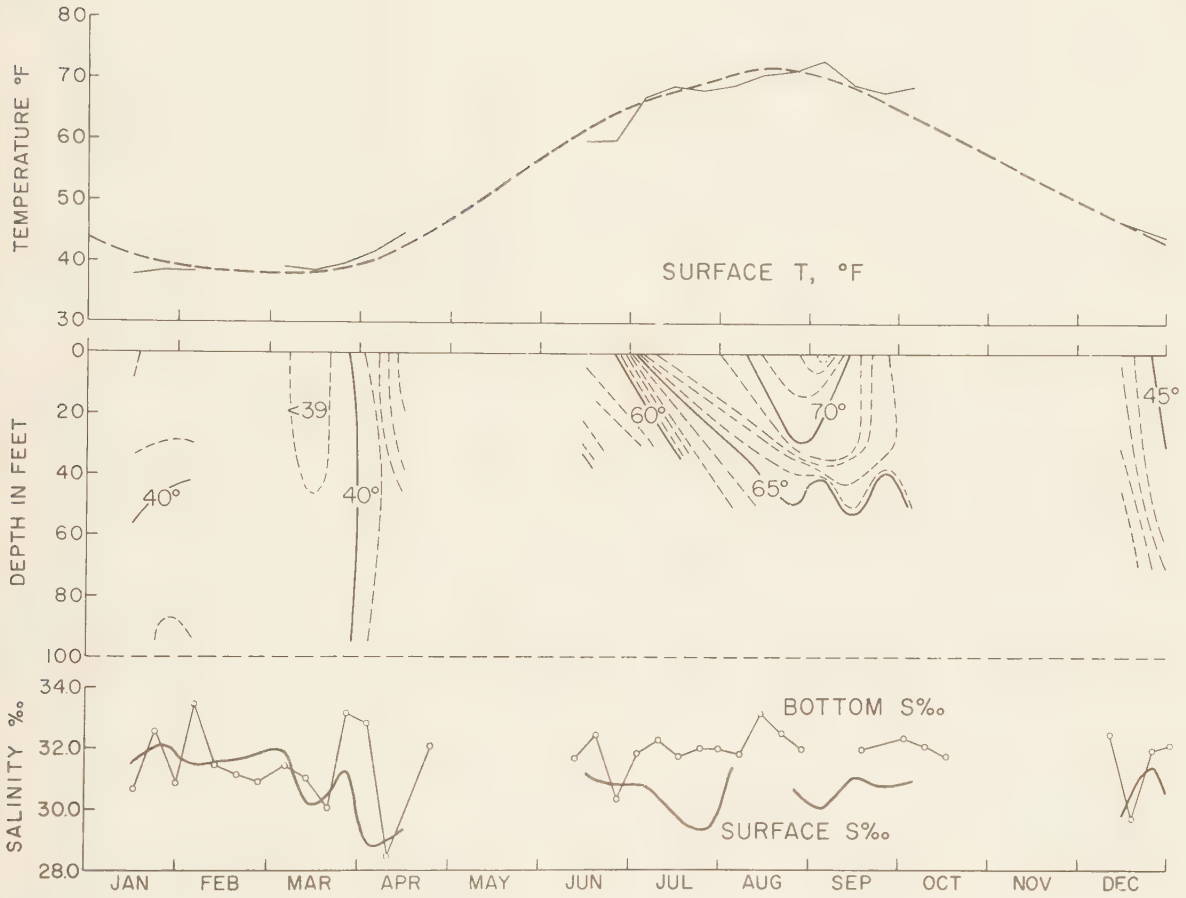

Figure 10. Ambrose Lightship, 1959. (Dashed line in upper diagram, mean for period 1937-1956.)

Table 10

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4"W. Depth of water - 95 feet

1959

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1							37.7	38.6	39.9	42.0	30.96	-
2							37.6	37.6	38.4	41.8	31.80	-
3							-	-	-	-	29.60	-
4							37.7	38.7	41.1	41.4	31.30	-
5							38.9	39.9	41.1	41.9	.44	-
6							38.9	41.4	41.7	41.9	.77	33.4
7							38.0	38.6	40.4	42.3	.58	-
8							38.9	38.9	42.4	42.7	31.34	-
9							-	-	-	-	32.84	-
10							38.8	38.7	39.1	42.1	.33	-
11	38.3	39.0	40.2	-	30.61	-	39.2	39.4	39.7	-	.63	-
12	38.0	38.2	39.5	42.1	32.27	-	-	-	-	-	32.90	-
13	39.8	39.9	40.5	42.1	30.79	-	39.2	39.9	40.0	41.4	30.97	31.4
14	-	-	-	-	32.02	-	-	-	-	-	31.44	-
15	39.0	39.1	39.9	42.1	30.42	-	-	-	-	-	30.46	-
16	36.5	37.2	38.2	41.2	30.56	30.56	-	-	-	-	32.01	-
17	37.0	37.2	37.2	41.4	32.18	-	-	-	-	-	31.38	-
18	36.1	39.3	40.0	40.5	31.20	-	35.4	35.8	36.0	37.5	30.83	-
19	37.0	38.2	40.7	40.9	32.50	-	-	-	-	-	31.98	-
20	38.5	39.1	40.3	41.2	.46	-	-	-	-	-	30.88	31.1
21	37.9	38.2	41.8	41.9	.50	-	-	-	-	-	29.86	-
22	39.9	39.9	39.9	40.1	32.81	-	-	-	-	-	32.44	-
23	39.0	40.6	41.5	-	31.96	32.56	-	-	-	-	.08	-
24	37.0	38.4	40.5	42.5	.84	-	-	-	-	-	32.56	-
25	-	-	-	-	31.32	-	-	-	-	-	33.06	-
26	38.9	38.6	39.9	43.0	32.73	-	-	-	-	-	31.83	-
27	38.9	39.0	40.8	43.0	.56	-	-	-	-	-	30.92	30.9
28	38.0	39.0	41.3	42.0	.71	-	-	-	-	-	31.03	-
29	38.1	39.2	39.7	41.9	32.11	-						
30	38.4	39.0	39.5	-	30.94	30.86						
31	-	-	-	-	31.18	-						
Mean	-	-	-	-	-	-	-	-	-	-	31.58	31.7

Table 10 (cont'd)

BROSE LIGHTSHIP 40°27.1'N. 73°49.4"W. Depth of water - 95 feet

1959

Depth Day	March* Temperature °F 0'	30'	50'	95'	March* Salinity °/oo 0'	95'	April* Temperature °F 0'	30'	50'	95'	April* Salinity °/oo 0'	95'
1	37.6	37.6	38.1	38.4	32.53	-	40.9	40.3	40.5	40.8	29.58	-
2	38.5	38.9	39.0	39.2	.66	-	40.9	40.1	40.2	-	.59	-
3	-	-	-	-	.71	-	41.7	41.4	41.2	-	.03	32.82
4	-	-	-	-	.51	-	38.4	37.8	37.6	40.7	29.04	-
5	39.9	39.7	39.7	39.5	32.05	-	42.3	41.1	40.3	40.1	28.76	-
6	39.7	39.7	39.4	39.4	31.47	31.43	41.8	40.2	40.1	40.2	27.16	-
7	39.2	39.2	39.3	39.3	31.44	-	41.7	41.5	41.4	41.5	30.21	-
8	39.7	39.7	39.9	39.9	32.46	-	42.7	41.3	41.5	41.5	28.64	-
9	39.4	39.4	39.5	40.7	30.14	-	43.2	40.8	41.7	41.8	26.63	-
10	-	-	-	-	31.43	-	43.4	41.8	41.9	41.9	28.47	28.48
11	37.3	37.5	38.4	38.6	31.70	-	42.9	41.9	41.4	-	30.04	-
12	-	-	-	-	30.92	-	44.0	42.1	41.2	41.2	31.69	-
13	-	-	-	-	.96	31.01	43.1	42.7	41.0	-	31.58	-
14	-	-	-	-	30.49	-	43.7	43.3	41.1	-	26.37	-
15	38.5	38.5	39.5	39.1	32.08	-	44.2	43.7	41.7	41.1	29.46	-
16	39.7	39.7	40.3	40.5	31.90	-	45.6	43.4	41.3	41.1	24.63	-
17	39.1	39.4	39.6	40.0	26.83	-	46.0	42.9	41.7	40.9	29.40	-
18	39.9	40.1	40.7	40.2	30.79	-	45.2	43.0	42.1	41.0	.21	-
19	36.7	37.1	37.3	39.8	29.70	-	46.0	44.5	43.0	41.1	29.41	-
20	38.3	38.1	38.1	40.6	25.62	30.07	46.8	46.1	41.8	41.2	31.36	-
21	39.8	38.5	38.5	39.7	32.36	-	45.2	45.2	43.7	42.0	31.87	-
22	-	-	-	-	31.80	-	44.2	44.1	42.9	42.5	32.08	-
23	38.5	38.8	39.7	39.9	30.48	-	44.8	44.8	44.9	43.9	32.07	-
24	38.9	38.7	-	-	29.65	-	44.9	44.7	44.7	44.6	31.69	32.09
25	-	-	-	-	31.40	-	44.5	44.8	44.4	44.1	30.57	-
26	40.1	40.2	39.9	40.8	32.18	33.18						
27	40.1	40.1	-	-	32.82	-						
28	39.8	39.9	39.9	39.9	29.32	-						
29	40.1	40.1	39.5	-	31.31	-						
30	39.5	39.3	39.8	-	.19	-						
31	39.9	39.8	39.8	-	31.18	-						
Mean	39.1	39.1	39.3	-	31.10	31.42						

* Temperature values approximate.

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Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4"W. Depth of water - 95 feet

1959

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1												
2												
3												
4												
5												
6												
7							62.8	53.5	48.6	45.8	31.14	-
8							62.2	54.2	50.1	45.9	29.86	-
9							62.7	54.7	49.3	45.2	29.38	-
10							63.7	50.8	47.6	45.0	28.90	-
11							65.9	50.3	46.1	45.1	33.39	-
12							61.9	60.4	57.3	-	31.05	31.64
13							62.3	61.2	53.4	-	29.81	-
14							59.3	59.0	47.7	45.2	31.28	-
15							-	-	-	-	31.18	-
16							58.9	-	-	-	30.83	-
17							-	-	-	-	31.65	-
18							57.0	57.0	47.3	44.0	.17	-
19							56.7	54.0	44.8	-	31.26	32.42
20							56.9	51.0	45.2	-	30.34	-
21							57.3	55.1	46.2	-	30.24	-
22							56.6	55.8	46.4	-	-	-
23							54.7	48.0	-	-	29.66	-
24							57.2	53.0	47.0	-	30.80	-
25							62.9	56.1	48.4	-	.93	-
26							62.3	55.7	50.8	-	.48	30.31
27							64.8	57.1	-	-	30.77	-
28							-	-	-	-	31.46	-
29							63.8	-	-	-	.39	-
30							-	-	-	-	31.38	-
Mean							-	-	-	-	-	-

Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°24.1'N. 73°49.4"W. Depth of water - 95 feet

1959

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	66.2	57.3	54.6	-	31.46	-	74.1	58.2	57.0	-	30.31	-
2	64.9	64.3	57.9	-	.61	-	70.3	57.5	55.0	-	31.22	-
3	64.9	63.3	55.6	-	.43	31.83	69.4	-	-	-	31.66	-
4	67.2	55.3	51.4	-	.41	-	69.7	69.2	66.7	57.2	32.16	-
5	66.9	58.0	54.4	-	31.38	-	69.6	69.9	67.7	57.5	30.99	-
6	68.8	62.3	-	-	28.33	-	66.9	66.5	65.9	58.9	32.16	-
7	68.9	55.6	54.2	-	30.86	-	65.5	-	-	-	31.96	31.80
8	69.0	55.0	50.7	-	31.40	-	69.2	66.8	64.9	58.1	31.20	-
9	67.8	54.8	-	-	29.79	-	69.0	68.2	65.0	-	30.89	-
10	68.2	53.8	-	-	30.03	32.28	69.0	66.6	64.7	-	30.80	-
11	66.6	57.2	-	-	30.34	-	68.0	67.0	66.3	-	31.50	-
12	-	-	-	-	29.21	-	70.9	68.0	65.7	-	-	-
13	69.1	55.8	-	-	.68	-	71.0	68.5	65.5	-	-	-
14	68.9	59.2	-	-	.19	-	72.0	67.6	65.0	-	-	33.16
15	-	-	-	-	29.88	-	71.2	67.2	65.6	-	-	-
16	68.5	64.3	53.5	-	30.53	-	71.7	66.9	65.5	-	-	-
17	70.5	68.6	-	-	.55	31.71	73.0	66.6	63.7	-	-	-
18	68.8	-	-	-	30.34	-	73.0	64.8	64.0	-	30.60	-
19	69.9	61.9	-	-	29.17	-	69.2	66.2	63.1	-	31.02	-
20	70.1	57.8	-	-	.39	-	71.0	65.6	61.8	-	-	-
21	63.1	62.0	-	-	29.92	-	70.5	66.2	-	-	30.17	32.48
22	68.3	54.0	-	-	30.20	-	70.2	69.0	61.7	-	.04	-
23	67.2	58.8	52.9	-	29.98	-	69.1	67.2	63.9	-	30.50	-
24	69.0	-	-	-	.83	32.00	69.0	69.0	67.5	-	31.19	-
25	67.9	54.0	-	-	.93	-	70.8	70.5	63.8	-	.40	-
26	68.2	54.7	53.0	-	.03	-	72.1	70.5	66.7	-	31.51	-
27	70.8	55.2	53.1	-	29.55	-	72.8	71.0	67.0	-	30.41	-
28	71.2	59.0	54.2	-	27.83	-	73.6	71.4	63.3	59.0	30.18	31.99
29	64.9	54.9	53.8	-	27.73	-	73.8	71.7	66.0	-	-	-
30	70.3	58.9	55.8	-	29.05	-	73.6	71.8	66.0	-	-	-
31	71.6	57.1	56.9	-	29.24	31.97	73.4	71.9	64.1	-	-	-
Mean	68.2	58.3	-	-	29.94	31.96	70.7	67.6	64.4	-	-	32.36

Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°24.1'N. 73°49.4"W. Depth of water - 95 feet

1959

	September						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1	73.7	70.6	62.2	-	29.63	-	68.9	68.0	60.2	-	30.80	-
2	72.5	70.5	61.7	-	.75	-	68.8	68.1	63.9	52.9	30.28	32.3
3	70.9	67.5	61.2	52.9	.74	-	68.9	68.9	68.2	-	31.61	-
4	72.2	66.9	61.8	-	.92	-	69.2	69.2	-	-	31.35	-
5	74.4	68.7	62.1	56.5	.94	-	69.5	69.2	67.5	-	30.16	-
6	-	-	-	-	.87	-	66.7	66.7	65.1	-	30.11	-
7	74.8	69.1	62.8	55.1	29.85	-	69.9	69.5	67.3	-	31.88	-
8	74.4	70.8	62.8	55.1	30.05	-	68.8	68.1	-	-	30.63	-
9	-	-	-	-	.70	-	70.1	70.0	69.1	-	30.33	32.0
10	73.9	74.9	64.8	54.0	.37	-	70.1	70.1	68.5	-	31.28	-
11	-	-	-	-	30.45	-	70.1	70.0	-	-	.48	-
12	72.0	72.1	69.5	60.1	31.24	-	68.1	68.9	63.0	-	31.06	-
13	72.1	72.2	66.6	63.9	30.70	-	67.8	68.0	66.1	-	30.71	-
14	72.1	72.0	65.5	60.1	.85	-	69.0	69.0	-	-	31.65	-
15	71.7	71.6	67.0	59.0	30.92	-	65.8	65.8	65.8	-	-	-
16	70.0	70.5	67.1	58.0	31.25	-	65.1	65.1	65.0	-	31.93	31.7
17	65.1	65.0	65.0	-	.40	-						
18	68.1	68.2	68.1	-	.48	31.99						
19	66.7	66.7	66.7	-	31.64	-						
20	66.1	66.0	65.6	-	30.68	-						
21	66.3	66.3	66.2	60.2	31.21	-						
22	-	67.0	63.2	51.8	30.75	-						
23	68.3	68.0	60.5	-	31.06	-						
24	68.2	68.0	62.9	51.3	30.74	-						
25	68.9	68.4	59.6	52.8	31.29	-						
26	69.1	69.0	60.1	52.0	31:47	-						
27	67.7	66.8	60.0	54.0	30.68	-						
28	66.1	65.0	59.8	-	29.63	-						
29	68.9	68.3	59.7	-	30.78	-						
30	69.2	68.1	63.0	-	29.92	-						
31												
Mean	70.1	68.8	63.5	-	30.60	-						

Table 10 (cont'd)

AMBROSE LIGHTSHIP 40°27.1'N. 73°49.4"W. Depth of water - 95 feet

1959

Depth	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Day	0'	30'	50'	95'	0'	95'	0'	30'	50'	95'	0'	95'
1							-	-	-	-	-	-
2							-	-	-	-	-	-
3							-	-	-	-	-	-
4							-	-	-	-	-	-
5							48.5	50.5	51.5	-	27.05	-
6							49.7	50.7	51.1	-	28.83	-
7							49.7	49.8	49.9	-	31.74	-
8							49.7	49.8	49.9	-	31.69	-
9							46.3	49.7	50.7	-	-	-
10							46.9	49.1	50.6	-	29.43	-
11							46.9	48.3	50.7	-	29.37	32.47
12							47.3	47.9	51.0	-	30.26	-
13							48.0	48.9	51.0	-	29.80	-
14							47.9	47.9	49.2	51.9	31.46	-
15							46.4	47.8	49.0	-	29.95	-
16							46.9	47.3	47.8	-	28.81	-
17							46.2	47.8	50.3	-	27.30	-
18							46.0	47.8	50.2	-	29.56	29.69
19							46.6	47.0	48.8	-	30.14	-
20							47.0	47.7	48.1	-	31.33	-
21							45.0	45.8	46.6	52.2	30.48	-
22							47.8	47.9	47.9	-	32.45	-
23							46.5	47.2	47.3	-	.51	-
24							46.0	46.0	45.6	-	32.34	-
25							45.8	45.9	46.0	-	31.92	31.91
26							44.2	46.0	46.6	-	30.76	-
27							44.5	45.7	46.2	-	30.80	-
28							44.2	45.7	45.6	-	28.28	-
29							46.2	46.0	46.2	-	32.39	-
30							43.0	43.1	43.7	-	32.16	-
31							42.0	43.7	43.9	-	31.18	-
Mean							-	-	-	-	-	-

Texas Tower #4 (off New York) Figure 11, Table 11)

The record here shows a surface water minimum in January, a warmer though static period from February through April and a period of steady warming into early July, when temperatures leveled off. The maximum occurred in mid-September, 10 days later than at most other stations. Cooling was retarded compared to 1958 and readings for the last decade in December were 7°F higher than they had been the previous year at that time.

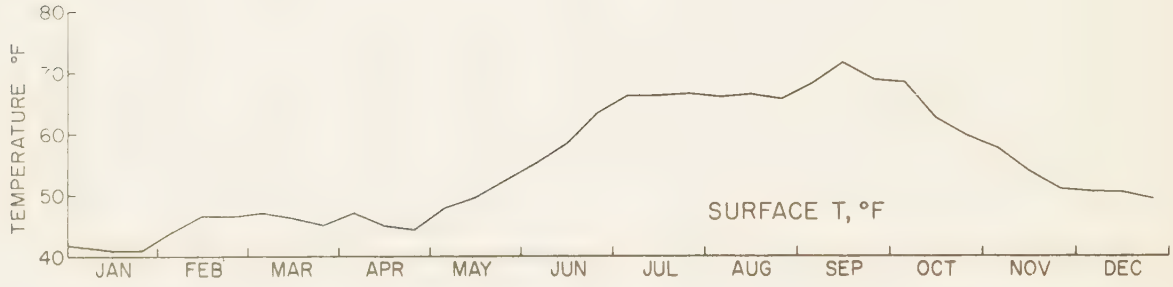

Figure 11. Texas Tower #4, off New York, 1959

Table 11

XAS TOWER #4, NEW YORK 1959 39°48.4'N. 72°40.6'W.

Surface Water Temperature °F

Month / Day	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
1	42	41	47.3	46.0	44.4	53.5	65.7	66.1	65.6	69.6	59.5	50.2
2	42	41	47.0	46.0	45.3	53.7	65.2	65.8	65.9	69.4	58.1	50.3
3	42	41.5	47.1	46.2	46.4	53.8	64.7	65.5	66.4	67.5	57.7	50.2
4	42	42.8	47.0	46.7	47.4	54.2	66.0	65.7	65.5	67.2	57.1	49.8
5	42	44.5	47.2	47.4	48.1	54.4	66.8	65.6	65.7	67.6	57.7	50.1
6	42	45	47.1	47.7	48.5	54.8	66.3	65.2	66.0	67.8	57.5	50.2
7	41	45.5	47.2	48.2	48.9	55.5	65.5	65.3	66.8	67.8	56.4	51.0
8	41	46	47.1	47.8	49.6	56.2	66.0	66.2	70.2	67.2	56.2	50.4
9	41	46.8	47.1	47.4	49.6	56.8	66.3	66.0	71.6	67.1	56.1	50.4
10	41	47	47.2	47.0	49.3	57.2	66.2	66.0	73.0	67.5	56.0	50.2
11	41	46.8	46.2	46.2	49.1	57.2	66.0	66.1	73.2	67.1	56.0	50.3
12	41	-	45.6	45.6	49.2	56.7	66.2	66.3	73.3	66.2	56.2	50.3
13	41	47	45.7	45.3	49.0	57.2	66.2	66.3	73.2	64.9	56.2	50.8
14	41	47	45.7	45.0	49.0	56.4	66.1	66.2	73.4	63.3	56.8	50.2
15	41	46.5	46.5	44.3	49.0	56.4	65.4	66.2	73.4	61.6	55.9	50.2
16	41	46.5	46.2	44.2	49.2	59.6	65.3	66.0	72.1	60.3	53.3	50.3
17	41	47	46.3	44.4	49.4	59.3	65.9	66.0	70.2	60.4	52.2	50.6
18	41	47	46.4	44.5	50.0	59.4	66.0	65.8	68.7	59.4	49.4	49.9
19	41	46.5	46.6	44.6	50.4	59.5	66.1	65.6	67.0	59.1	49.3	49.5
20	41	46	46.7	44.8	50.6	60.2	66.0	66.0	66.2	59.4	49.9	49.2
21	41	46	46.1	45.0	51.4	60.4	65.8	65.2	66.8	60.2	50.7	48.9
22	41	46	44.9	44.2	51.7	60.6	66.0	64.5	67.6	59.7	51.2	49.0
23	41	46	44.4	43.2	51.6	60.5	65.9	64.3	67.7	60.0	50.9	48.7
24	41	46.2	44.4	43.6	51.3	62.6	65.6	64.4	68.0	59.9	51.0	48.8
25	41	46.5	45.2	44.8	51.8	64.4	65.6	64.6	67.6	59.9	50.2	49.4
26	41	47	45.1	44.9	52.2	64.6	66.5	65.2	67.9	59.3	50.6	49.6
27	41	47	44.8	44.6	52.4	64.6	66.4	65.5	68.2	59.2	51.2	49.6
28	41	47	44.4	43.7	52.8	64.2	66.3	65.6	68.7	58.2	50.8	49.5
29	41		44.6	43.8	53.0	64.4	66.6	65.7	70.1	57.8	50.0	49.3
30	41		45.1	44.2	53.3	65.9	66.5	65.6	70.5	58.8	50.0	49.2
31	41		45.6		53.5		66.2	65.6		58.9		48.8
Mean	41.2	45.7	46.1	45.4	49.9	58.8	66.0	65.6	69.0	63.0	53.8	49.8

Barnegat Lightship (Figure 12, Table 12)

The temperature readings for January, February and March at this station are presented with reservations, since the bathythermograms made during these months required rather extreme corrections. In view of the records from Ambrose and Five Fathom Bank stations it appears quite possible that readings are too low.

Relatively cold June, July and August gave way to an abrupt rise during early September in surface temperatures. The indications of upwelling along the bottom in September and October were more pronounced at stations further to the south. On September 19th the thermocline was virtually destroyed, but took form again briefly; by mid-October conditions had become isothermal.

The January surface salinities were lower than those for the previous three years, but for the rest of the season matched the earlier record. The minimum probably occurred in April and was missed.

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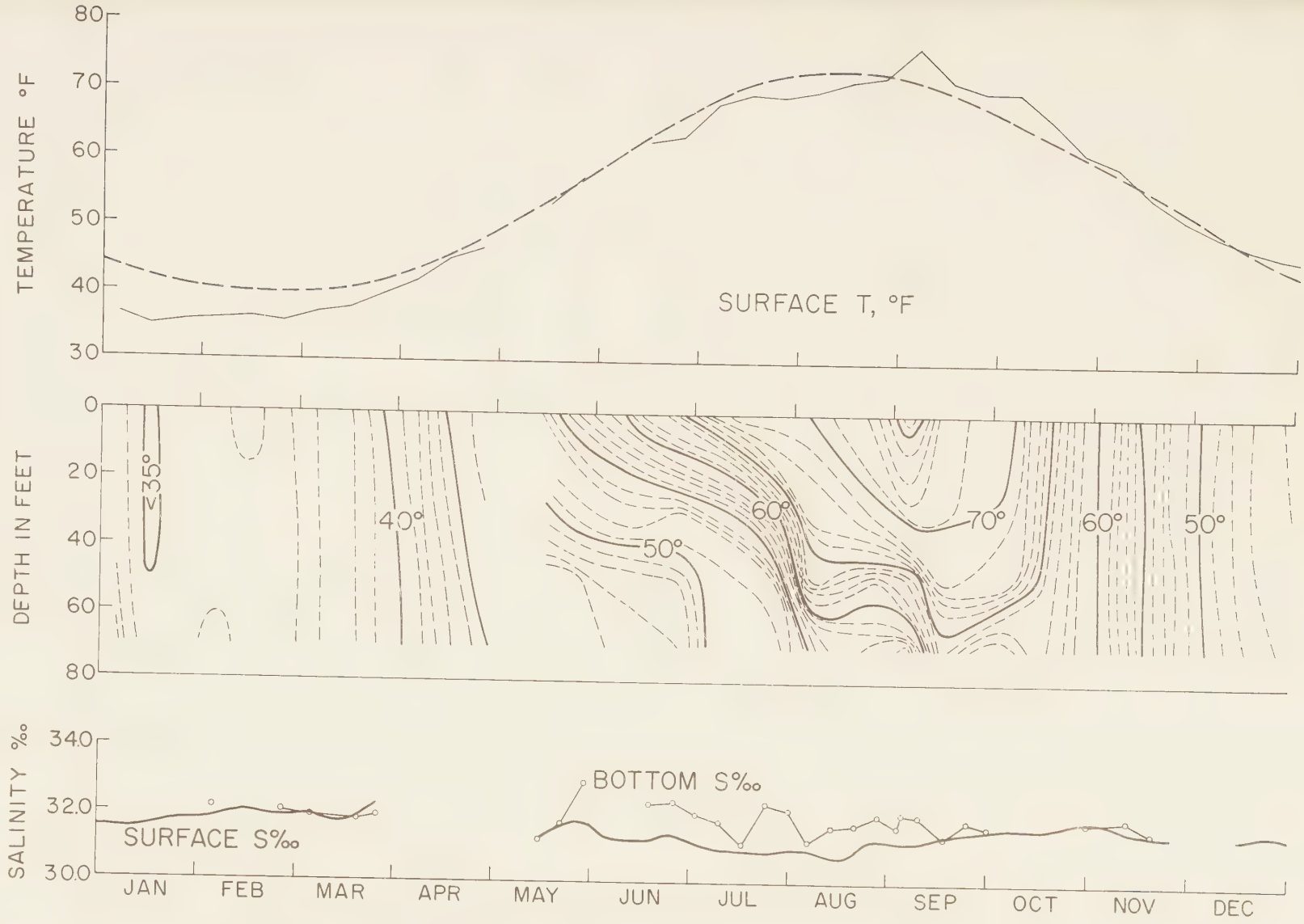

Figure 12. Barnegat Lightship, 1959. (Dashed line in upper diagram, mean for period 1947-1956.)

Table 12

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W. Depth of water - 72 feet

1959

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	39.4	39.9	41.5	41.7	31.81	-	-	-	-	-	31.80	-
2	39.3	39.3	40.3	43.0	.64	-	35.9	35.9	35.9	36.0	.99	-
3	39.4	39.4	39.7	41.7	.70	-	35.3	35.8	35.9	35.9	.88	-
4	38.8	38.6	39.0	42.1	.59	-	35.7	35.8	36.2	36.8	.74	-
5	-	-	-	-	.40	-	35.8	36.1	36.1	36.6	.87	32.17
6	34.9	35.1	35.1	35.1	.36	-	36.3	36.1	36.5	36.8	.87	-
7	35.0	35.0	35.1	35.1	.27	-	35.8	35.8	35.8	35.8	.80	-
8	34.9	34.9	34.9	35.2	.20	-	35.7	35.8	35.7	35.8	.91	-
9	34.8	34.8	34.9	35.0	.66	-	35.7	35.6	35.6	35.6	.97	-
10	34.1	34.3	34.4	34.8	-	-	35.7	35.5	35.6	35.7	31.96	-
11	34.1	34.2	34.2	35.0	.41	-	-	-	-	-	-	-
12	34.3	34.4	34.3	34.5	.43	-	36.3	35.4	35.4	35.4	32.14	-
13	35.2	35.1	35.7	36.6	.39	-	36.1	35.2	35.9	35.9	31.77	-
14	35.0	34.0	33.9	34.3	.58	-	36.2	35.6	36.0	36.0	31.86	-
15	35.1	35.0	35.7	36.9	.63	-	36.9	36.2	36.2	36.2	32.03	-
16	35.2	35.6	36.1	37.1	.47	-	38.0	36.2	36.2	36.2	.18	-
17	35.1	35.1	35.1	35.1	.66	-	35.8	35.6	35.8	35.9	.04	-
18	34.9	34.8	34.9	34.9	.74	-	-	35.9	35.9	36.0	32.02	-
19	35.1	34.9	34.9	34.9	.76	-	-	-	-	-	-	-
20	35.0	34.9	34.9	34.9	.67	-	35.1	35.3	35.4	35.4	32.08	-
21	34.9	34.9	34.8	35.0	31.61	-	-	-	-	-	-	-
22	-	-	-	-	-	-	34.9	34.9	35.2	35.2	31.86	-
23	35.5	35.1	35.4	35.8	31.77	-	-	-	-	-	31.92	-
24	35.6	35.6	35.8	35.9	.58	-	36.1	35.8	35.6	35.6	32.00	-
25	35.4	35.5	36.1	36.8	31.93	-	35.7	35.0	35.0	35.0	31.86	-
26	-	-	-	-	-	-	35.3	35.1	35.2	35.7	32.00	32.08
27	36.2	35.8	35.8	35.9	31.93	-	35.7	35.6	35.4	35.6	31.99	-
28	36.2	35.9	35.9	35.9	.97	-	35.9	35.0	35.1	35.8	31.85	-
29	35.8	35.7	35.8	35.8	.81	-						
30	35.2	35.3	35.8	36.1	.61	-						
31	35.4	35.5	35.9	36.3	31.82	-						
Mean	35.7	35.7	35.9	36.5	31.62	-	35.9	35.6	35.7	35.9	31.94	-

Table 12 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W. Depth of water - 72 feet

1959

	March						April					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	35.7	35.7	35.8	37.0	31.81	-	40.1	39.2	39.1	39.1	-	-
2	36.2	36.2	36.2	36.1	32.17	-	-	-	-	-	-	-
3	37.3	36.8	36.8	36.8	.19	-	40.9	40.1	39.7	40.0	-	-
4	37.4	37.1	37.1	37.2	32.04	-	40.9	40.3	40.0	40.0	-	-
5	37.2	36.7	36.6	37.2	31.84	31.93	-	-	-	-	-	-
6	-	-	-	-	-	-	41.1	41.0	40.6	40.6	-	-
7	37.2	37.2	37.1	37.1	31.86	-	41.8	41.5	41.4	40.8	-	-
8	37.6	36.9	36.9	36.9	.83	-	42.8	42.1	41.1	41.1	-	-
9	37.4	36.9	36.8	36.8	.86	-	43.3	43.0	41.1	41.0	-	-
10	37.1	37.0	37.0	37.1	.90	-	43.2	42.6	42.1	41.0	-	-
11	37.8	37.1	37.1	37.1	31.99	-	43.6	43.2	41.4	41.2	-	-
12	-	-	-	-	-	-	42.9	42.9	42.9	41.8	-	-
13	-	-	-	-	-	-	43.3	43.3	43.2	43.0	-	-
14	36.7	36.6	36.6	36.7	31.42	-	45.1	45.1	45.1	45.7	-	-
15	37.6	37.3	37.2	37.6	.93	-	44.4	43.8	43.0	43.0	-	-
16	38.6	38.3	38.2	38.3	.85	-	45.5	43.6	43.0	43.0	-	-
17	37.9	37.2	37.0	37.3	.72	-	46.2	44.8	43.0	42.9	-	-
18	37.6	37.6	37.6	37.4	.89	-	48.0	43.0	43.0	43.0	-	-
19	37.8	37.8	37.8	37.8	.90	31.82	48.4	43.0	43.0	43.0	-	-
20	38.6	37.9	38.2	38.2	.46	-	45.3	42.6	42.6	42.7	-	-
21	40.1	38.3	38.3	38.3	.56	-	46.4	45.1	43.3	43.2	-	-
22	38.8	38.8	38.8	38.8	.17	-	45.0	44.5	43.3	43.2	-	-
23	39.1	38.4	38.6	39.1	31.99	-	44.8	44.5	44.4	43.0	-	-
24	40.3	38.4	38.5	38.7	32.04	-	50.9	48.7	48.7	48.5	-	-
25	-	-	-	-	31.98	-	-	-	-	-	-	-
26	39.7	39.3	38.8	-	.99	31.95	47.9	45.9	44.8	43.2	-	-
27	40.2	40.1	39.9	39.8	31.95	-	47.9	47.3	44.8	43.2	-	-
28	39.8	39.8	39.8	39.8	32.83	-	45.4	45.4	45.8	45.8	-	-
29	41.0	40.6	40.2	40.2	33.02	-	45.9	45.1	45.1	45.2	-	-
30	40.1	40.2	40.2	40.2	33.04	-	46.4	45.5	45.4	45.2	-	-
31	40.2	40.2	40.2	40.2	32.91	-						
Mean	38.5	37.9	37.9	38.0	32.00	-	44.7	43.6	43.0	42.7	-	-

Table 12 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W. Depth of water - 72 feet

1959

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	47.8	45.5	45.4	45.2	-	-	-	-	-	-	31.72	
2	48.4	46.2	46.1	45.5	-	-	-	-	-	-	32.53	
3	48.7	47.3	46.6	45.3	-	-	-	-	-	-	31.93	
4	-	-	-	-	-	-	-	-	-	-	31.92	
5	-	-	-	-	-	-	-	-	-	-	-	
6	-	-	-	-	-	-	59.4	46.1	45.9	45.9	30.24	
7	-	-	-	-	-	-	67.5	46.1	45.8	45.8	.89	-
8	-	-	-	-	-	-	63.3	48.2	45.3	45.5	30.82	-
9	-	-	-	-	-	-	64.3	51.9	45.1	45.1	31.16	-
10	-	-	-	-	-	-	64.4	49.8	45.2	45.5	30.65	-
11	-	-	-	-	-	-	64.4	48.7	45.5	45.5	31.12	-
12	54.1	48.0	45.5	45.2	31.12	-	65.8	48.1	46.3	46.1	31.15	-
13	54.4	47.7	45.3	45.2	.12	-	66.1	48.9	46.4	46.4	30.45	-
14	52.9	48.0	45.2	45.2	31.25	31.25	62.7	55.0	50.9	46.8	-	-
15	51.2	47.0	45.0	45.0	-	-	60.7	56.0	46.9	46.9	31.08	-
16	51.9	51.4	45.2	45.2	31.39	-	60.5	56.8	47.7	47.5	.59	-
17	52.3	50.2	45.2	45.2	.42	-	-	-	-	-	.48	-
18	53.0	50.1	45.1	45.0	.42	-	60.3	58.4	47.8	-	.50	32.36
19	54.8	52.9	45.3	45.2	.24	-	59.8	48.9	47.6	47.2	.55	-
20	53.4	52.7	45.2	45.2	.68	-	-	-	-	-	.54	-
21	54.2	49.8	45.2	45.2	.69	31.76	59.5	55.0	46.5	46.2	.02	-
22	55.0	48.0	45.1	45.1	.70	-	62.6	47.6	46.1	46.1	.63	-
23	53.8	45.7	45.1	45.1	.73	-	63.1	46.6	46.7	46.7	.40	-
24	55.7	49.1	45.2	45.2	.53	-	62.4	46.8	46.7	46.6	.50	-
25	57.0	53.0	45.7	45.7	.76	-	63.5	49.2	46.7	46.6	.56	32.40
26	56.5	55.2	45.4	45.5	.91	-	-	-	-	-	.66	-
27	58.0	53.8	45.7	45.8	.97	-	63.4	55.6	47.2	47.2	.34	-
28	58.1	53.1	45.5	45.5	.87	32.94	64.3	50.8	48.0	47.0	.38	-
29	60.0	53.2	45.7	45.7	.97	-	63.9	54.4	47.3	47.2	.22	-
30	60.3	55.3	45.7	45.7	.92	-	66.8	55.2	48.3	47.8	31.26	-
31	61.0	54.8	45.8	45.8	31.97	-						
Mean	-	-	-	-	-	-	-	-	-	-	31.33	-

Table 12 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W. Depth of water - 72 feet

1959

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	64.2	56.0	48.6	48.2	30.95	-	74.2	57.7	52.9	51.1	31.03	-
2	68.1	56.2	50.8	-	31.16	32.01	71.1	69.1	60.8	54.0	.03	-
3	68.2	53.4	50.2	50.2	30.78	-	70.9	70.0	68.2	54.4	31.10	-
4	68.4	53.3	50.5	50.2	31.08	-	70.5	69.8	66.0	54.8	-	-
5	67.2	55.0	50.9	50.7	30.94	-	69.9	69.3	63.8	53.9	31.13	-
6	68.8	52.4	50.6	50.6	30.73	-	68.1	68.1	66.7	-	31.13	31.28
7	69.6	56.0	50.9	50.9	31.22	-	68.9	67.2	67.7	-	30.65	-
8	69.2	58.2	51.5	51.0	.20	-	68.8	67.3	67.0	58.8	.53	-
9	68.2	53.8	51.2	51.2	31.46	31.80	68.2	68.1	66.2	57.3	30.61	-
10	70.0	53.6	49.4	49.4	30.72	-	-	65.3	63.9	-	31.33	-
11	69.6	55.2	52.3	52.2	31.07	-	69.2	67.2	64.7	59.2	30.50	-
12	69.9	53.4	51.2	49.8	.10	-	70.1	67.6	65.7	59.5	.40	-
13	69.8	55.8	48.8	48.8	31.00	-	71.8	67.5	65.0	60.0	.46	31.69
14	69.0	55.0	49.2	49.2	30.98	-	73.1	67.8	65.1	57.5	.44	-
15	68.2	54.0	50.7	50.2	31.16	-	73.8	66.4	65.5	58.0	30.35	-
16	69.0	60.0	53.0	51.9	31.18	31.12	72.1	71.0	64.7	57.0	31.00	-
17	69.2	56.0	53.6	-	30.89	-	72.0	67.0	62.9	56.5	.09	-
18	70.0	54.9	50.9	-	.64	-	69.6	68.8	58.8	56.1	.18	-
19	70.6	55.0	50.1	-	.50	-	71.1	67.1	60.6	56.2	.04	-
20	70.2	55.4	50.4	50.2	30.70	-	73.1	66.4	56.5	56.2	.11	31.71
21	69.4	54.6	50.2	-	31.09	-	71.5	64.0	56.9	55.9	.10	-
22	70.3	66.7	55.1	50.1	30.98	-	70.0	66.1	56.7	55.8	.42	-
23	70.1	65.9	53.9	50.1	30.55	32.33	71.0	70.4	58.0	56.9	.24	-
24	65.0	63.2	52.6	50.2	31.09	-	68.0	68.0	58.5	57.4	.42	-
25	63.4	59.1	50.7	50.3	30.83	-	70.2	68.5	59.0	58.4	.30	-
26	-	-	-	-	31.07	-	72.5	69.2	60.8	57.0	.24	-
27	67.7	55.1	50.4	50.5	31.34	-	73.0	69.0	59.5	56.1	.22	32.00
28	69.0	57.9	50.8	50.7	30.47	-	73.8	71.2	63.2	55.6	.25	-
29	69.3	57.2	51.1	51.0	.61	-	74.5	71.0	63.8	55.8	.14	-
30	73.3	59.4	51.2	51.0	.55	32.14	75.4	70.9	61.8	55.5	.19	-
31	75.2	58.2	51.2	50.9	30.89	-	75.2	72.6	63.0	55.0	31.05	-
Mean	69.0	56.7	51.1	50.3	30.93	31.88	71.4	68.1	62.4	56.4	30.99	31.67

Table 12 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W. Depth of water - 72 feet

1959

	September						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	75.2	71.3	62.6	55.6	31.24	-	71.8	71.7	70.7	59.2	31.68	31.69
2	75.7	70.1	59.7	54.3	.19	-	-	-	-	-	-	-
3	78.0	69.5	61.8	56.5	.22	31.68	69.9	69.9	69.8	62.5	31.67	-
4	76.4	68.2	61.1	54.8	.10	32.04	70.0	69.9	69.8	62.2	.70	-
5	76.6	72.0	64.0	56.0	.21	-	70.2	70.1	69.9	62.2	.74	-
6	77.2	72.9	-	-	.23	-	69.5	69.0	69.0	61.8	.58	-
7	77.1	74.1	64.3	56.2	.31	-	69.9	69.5	68.9	61.2	.74	-
8	-	-	-	-	.11	-	70.1	69.6	68.6	61.7	.77	-
9	76.7	75.2	62.8	55.2	.16	31.99	69.9	69.9	67.7	61.5	.71	-
10	77.2	73.4	63.5	57.0	.16	-	69.9	69.8	63.9	61.7	.62	-
11	76.6	76.3	64.5	58.0	.36	-	69.9	69.1	62.9	62.1	.61	-
12	73.1	73.0	72.7	64.8	.25	-	68.8	68.4	65.3	62.2	.50	-
13	73.0	73.0	72.7	65.0	.33	-	67.2	67.1	67.1	62.1	31.64	-
14	72.8	72.8	72.3	64.2	.24	-	-	-	-	-	-	-
15	72.0	71.9	70.7	61.1	31.21	-	65.8	65.8	65.8	65.8	31.78	-
16	-	-	-	-	-	-	65.1	65.1	65.1	65.1	.74	-
17	69.9	69.9	69.9	-	31.43	31.38	64.9	64.8	64.9	65.0	.43	-
18	70.0	69.9	69.9	68.2	.26	-	64.7	64.7	64.7	64.7	.66	-
19	68.6	68.5	68.5	68.4	.57	-	64.0	64.0	64.0	64.0	.75	-
20	68.9	68.2	68.2	67.0	.49	-	64.1	64.1	64.0	64.0	.80	-
21	68.9	68.9	68.8	63.7	.34	-	-	-	-	-	-	-
22	69.2	68.8	68.3	63.8	.45	-	-	-	-	-	-	-
23	69.3	68.9	68.2	62.5	.56	-	62.1	62.0	61.9	61.8	31.93	-
24	69.9	68.8	68.0	61.5	.54	31.86	-	-	-	-	-	-
25	69.9	69.8	68.0	61.2	.63	-	-	-	-	-	31.79	-
26	69.9	69.9	69.6	61.8	.64	-	62.1	62.1	62.0	61.3	.77	-
27	70.2	70.0	69.5	61.1	.61	-	62.1	62.1	62.0	61.8	.84	-
28	71.1	70.8	69.7	60.8	.68	-	61.1	61.1	61.1	61.1	.88	-
29	71.2	70.8	68.8	59.8	31.44	-	60.9	60.9	60.7	60.6	.89	-
30	71.8	71.4	66.2	59.4	-	-	60.1	60.1	60.1	60.2	.90	31.82
31							60.9	60.9	60.5	60.5	31.76	-
Mean	72.7	71.0	67.2	60.7	31.36	31.79	66.2	66.1	65.2	62.3	31.73	-

Table 12 (cont'd)

BARNEGAT LIGHTSHIP 39°45.8'N. 73°56.0'W. Depth of water - 72 feet

1959

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	60.9	60.9	60.8	60.7	31.85	-	50.4	49.9	49.9	50.0	31.57	-
2	60.2	60.2	60.2	60.2	.86	-	50.3	50.1	50.0	50.1	31.60	-
3	59.9	59.9	59.8	59.7	.92	-	50.6	50.1	50.1	50.1	-	-
4	59.3	59.3	59.3	59.3	.94	-	50.1	50.0	50.0	50.0	-	-
5	-	-	-	-	.87	-	50.1	50.1	50.1	50.1	-	-
6	58.1	58.1	58.6	58.9	.56	-	50.4	50.1	50.0	50.0	-	-
7	-	-	-	-	.78	-	-	-	-	-	-	-
8	58.3	58.3	58.2	-	.96	-	48.6	48.4	48.4	48.8	-	-
9	58.1	58.0	57.9	57.9	31.94	-	46.8	47.2	47.9	48.6	-	-
10	57.3	57.3	57.2	57.2	32.05	-	46.7	46.4	47.9	47.9	-	-
11	57.1	57.1	57.0	57.0	31.95	-	46.0	46.3	46.7	48.6	-	-
12	53.1	56.9	56.9	56.9	30.12	31.93	47.1	46.6	48.0	48.0	-	-
13	56.3	56.2	56.1	56.6	31.78	-	47.5	47.6	48.9	48.9	31.02	-
14	56.9	56.9	56.9	56.5	31.86	-	48.1	48.0	48.0	48.0	.78	-
15	-	-	-	-	-	-	48.7	48.4	48.7	48.7	.55	-
16	55.1	55.1	55.1	55.2	31.75	-	-	47.0	47.1	48.2	.36	-
17	54.9	54.9	55.2	55.6	.46	-	47.0	46.7	46.8	47.8	.31	-
18	53.8	53.8	53.8	53.8	.51	-	47.0	47.0	47.3	47.9	31.43	-
19	53.0	53.0	53.0	53.1	.58	31.58	48.0	47.8	47.8	47.8	-	-
20	53.0	53.0	53.0	53.1	.69	-	47.2	47.1	47.3	47.4	-	-
21	52.7	52.7	53.2	53.3	.54	-	47.2	47.1	47.3	47.8	31.74	-
22	52.0	52.4	53.9	54.0	.38	-	47.1	47.1	47.0	47.0	.93	-
23	52.9	52.8	52.8	-	.72	-	45.4	46.0	46.1	47.0	31.65	-
24	51.6	52.0	53.1	52.9	.15	-	-	-	-	-	-	-
25	-	-	-	-	.34	-	46.0	46.1	46.2	47.0	31.63	-
26	51.8	51.8	51.9	51.9	.53	-	44.8	46.2	46.7	47.3	-	-
27	51.3	51.0	51.0	51.1	31.35	-	46.0	46.0	46.2	47.1	29.17	-
28	-	-	-	-	-	-	44.4	47.0	47.5	47.6	-	-
29	51.0	51.0	51.0	51.0	31.54	-	47.1	47.0	47.0	46.9	32.17	-
30	50.0	50.0	50.0	50.0	31.42	-	46.9	46.8	46.7	46.8	.16	-
31							46.7	46.7	46.5	46.7	32.20	-
Mean	55.3	55.3	55.4	55.5	31.62	-	47.6	47.6	47.9	48.2	-	-

Five Fathom Bank Lightship (Figure 13, Table 13)

Surface water temperatures, January through April were below the mean; the minimum occurred in late February and was below the minima for 1956 and 1957, but not as low as that for 1958. The relatively cold water which appeared here in mid-January is identified by the lowered salinity as having come from near shore. As at other stations the surface maximum occurred in early September and was followed by 10 days of rapid cooling. From May to October there was a series of penetrations of cold water at the bottom. The intrusion in late July, not seen at the Barnegat station, also appeared at Winter Quarter and Chesapeake. This was followed by considerable mixing which produced lower surface temperatures and rising bottom values. The second intrusion was followed in mid-October by the final autumn turnover.

Surface salinities showed no unusual departures from the patterns of previous years. The minimum occurred in July following a month of excessive rainfall. As at other stations, values were generally slightly above the 1958 readings and substantially below those for 1957.

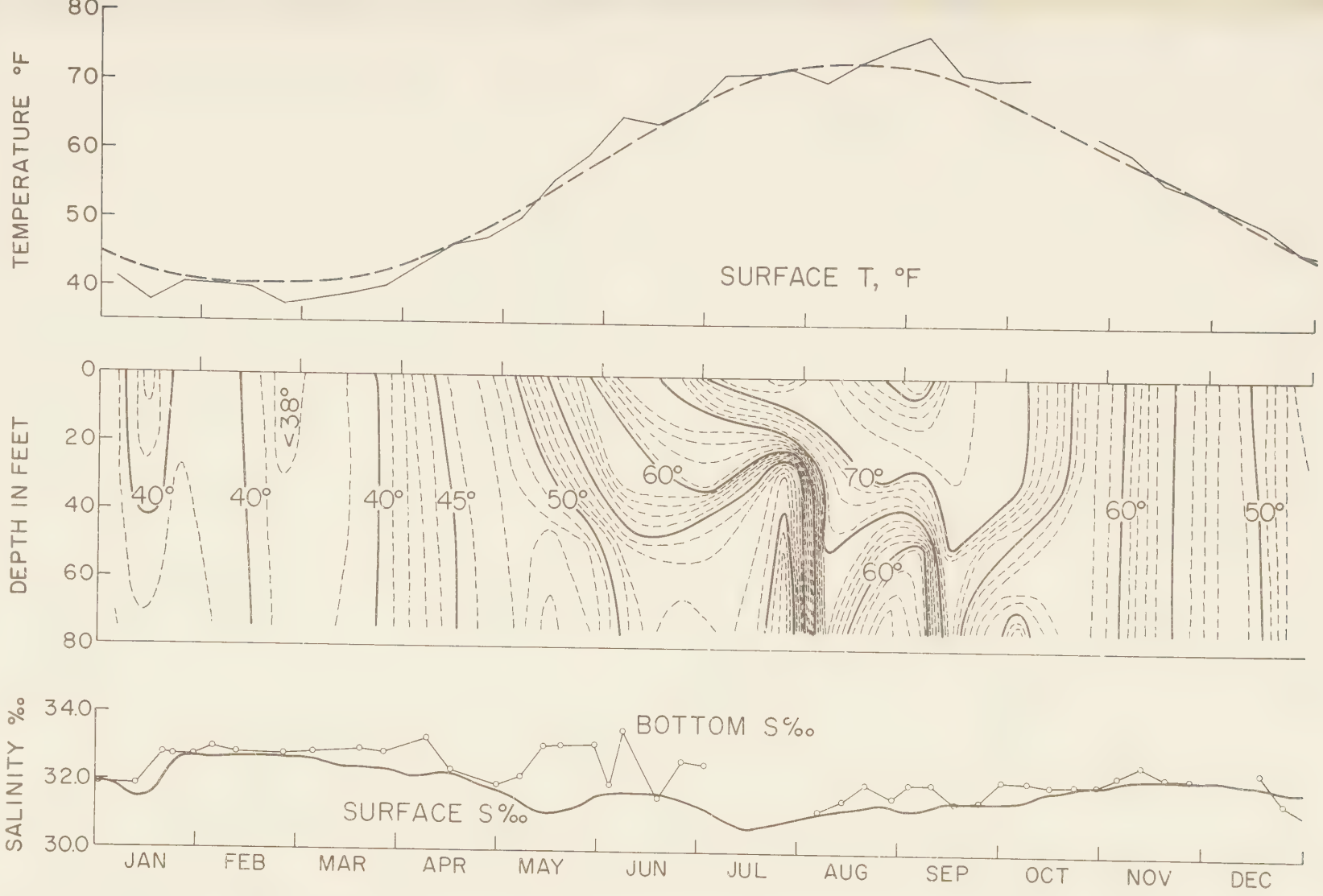

Figure 13. Five Fathom Bank Lightship, 1959. (Dashed line in upper diagram, mean for period 1947-1956.)

Table 13

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1959

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	75'	0'	75'	0'	30'	50'	75'	0'	75'
1	41.7	41.8	41.9	41.9	31.91	31.90	40.4	40.5	40.7	41.0	32.58	-
2	-	-	-	-	-	-	40.0	40.0	40.0	40.1	.49	-
3	41.8	42.0	42.1	42.2	31.84	-	39.1	39.1	39.4	40.2	32.48	-
4	41.7	41.9	42.7	42.9	31.87	-	-	-	-	-	-	-
5	-	-	-	-	-	-	41.0	41.1	41.2	41.8	32.77	33.00
6	-	-	-	-	-	-	40.1	41.7	41.9	41.9	.41	-
7	40.2	40.6	41.2	41.8	31.90	-	40.8	41.2	41.4	41.6	.84	-
8	41.2	41.3	41.9	41.9	31.44	-	40.1	40.6	41.0	41.1	.56	-
9	-	-	-	-	-	-	40.7	40.7	40.8	40.8	.73	-
10	41.0	41.1	41.1	42.0	32.05	-	41.1	41.3	41.1	41.1	32.82	-
11	40.3	40.6	40.7	40.7	.23	-	-	-	-	-	-	-
12	37.2	37.6	37.9	40.0	32.01	31.87	40.8	40.8	40.8	40.9	32.28	32.84
13	-	-	-	-	-	-	40.5	40.5	40.7	40.8	.81	-
14	37.2	38.0	40.0	40.9	31.52	-	40.8	40.8	41.3	41.3	.74	-
15	-	-	-	-	30.60	-	40.8	40.8	41.0	41.1	.94	-
16	37.0	40.2	41.6	42.1	30.82	-	40.0	40.7	40.4	40.3	32.72	-
17	-	-	-	-	-	-	-	-	-	-	-	-
18	36.2	38.0	42.1	42.9	31.22	-	39.1	39.2	39.2	39.6	32.73	-
19	-	-	-	-	-	-	38.9	38.9	38.9	38.9	.65	-
20	39.0	41.7	42.1	42.1	32.04	32.82	37.6	37.8	37.9	38.2	.57	-
21	-	-	-	-	-	-	37.7	37.9	38.1	38.8	.75	-
22	-	-	-	-	-	-	37.9	38.3	38.4	38.5	.81	-
23	40.2	40.4	40.6	40.9	32.59	32.74	37.4	37.9	38.9	39.0	.52	-
24	39.9	41.3	41.7	41.8	.54	-	37.4	37.6	38.1	38.6	.32	-
25	41.0	41.1	41.1	41.1	32.80	-	36.8	38.1	38.2	38.7	.67	-
26	-	-	-	-	-	-	37.1	38.1	38.9	38.9	.67	32.80
27	40.0	40.8	40.8	40.8	32.46	-	37.1	38.3	38.9	38.9	.39	-
28	-	-	-	-	-	-	38.1	38.2	38.7	38.9	32.95	-
29	40.9	41.0	41.1	41.1	32.69	32.74						
30	41.8	42.0	42.0	41.9	.96	-						
31	41.2	41.4	42.0	42.2	32.69	-						
Mean	(40.0)	(40.7)	(41.3)	(41.6)	32.01	32.41	39.3	39.6	39.8	40.0	32.65	-

Table 13 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1959

	March						April					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	75'	0'	75'	0'	30'	50'	75'	0'	75'
1	37.9	37.9	38.2	38.3	32.84	-	39.4	39.5	39.6	39.8	32.37	-
2	37.6	37.6	37.7	37.8	.64	-	-	-	-	-	-	-
3	36.9	36.9	37.2	37.5	.64	-	41.0	40.4	40.0	40.1	-	-
4	36.9	36.9	37.2	37.3	.34	-	41.3	41.0	40.8	40.8	32.44	-
5	37.9	37.9	38.0	38.1	.67	32.88	-	-	-	-	-	-
6	38.9	38.9	39.0	39.3	.71	-	41.8	41.5	41.1	41.1	32.02	-
7	38.8	38.9	39.0	39.3	.73	-	44.7	44.4	43.9	43.3	32.40	-
8	39.0	39.0	39.3	39.8	.82	-	45.7	44.5	44.0	44.0	-	-
9	39.1	39.1	39.7	39.8	.61	-	46.3	45.0	44.1	44.0	32.16	33.29
10	38.9	39.2	39.8	39.2	.29	-	47.1	46.5	44.7	44.2	31.61	-
11	38.9	38.9	38.9	38.9	32.78	-	46.7	44.7	44.1	44.1	31.90	-
12	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	32.45	-	-	-	-	-	-	-
14	38.8	38.8	38.9	38.9	.70	-	44.0	44.3	44.3	44.3	32.51	-
15	39.1	39.0	38.8	38.9	.58	-	45.0	44.4	44.2	44.1	32.26	-
16	39.0	39.0	39.0	39.2	.40	-	46.0	44.5	44.2	44.2	.29	32.38
17	39.9	39.7	39.6	39.7	.17	-	-	-	-	-	.20	-
18	38.8	38.8	38.9	39.9	.15	-	48.8	45.1	44.8	44.8	32.17	-
19	38.8	38.8	39.0	40.0	.20	32.97	-	-	-	-	-	-
20	39.2	39.3	39.8	39.9	.15	-	48.1	46.2	45.1	45.0	32.68	-
21	40.4	39.8	39.9	40.0	.13	-	-	-	-	-	.05	-
22	39.8	39.6	39.8	40.2	.14	-	46.5	46.6	46.7	46.7	32.04	-
23	39.7	39.9	40.6	41.0	.68	-	-	-	-	-	-	-
24	41.6	40.7	40.6	41.1	.06	-	47.0	46.5	46.3	46.2	32.17	-
25	41.8	40.8	40.3	41.0	.05	-	47.2	46.7	46.1	46.0	32.06	-
26	40.9	40.9	40.9	40.9	.58	32.83	47.2	45.8	45.4	45.2	31.88	-
27	40.6	40.5	40.5	40.6	.63	-	49.3	45.9	45.7	45.8	31.46	-
28	40.2	40.3	40.3	40.3	.77	-	-	-	-	-	-	-
29	39.4	39.2	39.3	39.7	.52	-	47.0	47.0	47.0	47.0	31.73	-
30	39.1	39.2	39.3	39.8	.48	-	47.8	47.5	47.3	47.1	31.78	31.93
31	39.9	39.9	39.9	39.9	32.56	-						
Mean	39.2	39.2	39.3	39.5	32.48	-	45.6	44.7	44.3	44.2	32.10	-

Table 13 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1959

	May						June					
	Temperature °F				Salinity °/₀₀		Temperature °F				Salinity °/₀₀	
Depth / Day	0'	30'	50'	75'	0'	75'	0'	30'	50'	75'	0'	75'
1	48.1	47.9	47.2	47.0	31.43	-	63.0	52.9	51.5	50.1	31.79	-
2	48.4	47.4	47.2	47.0	.51	-	-	-	-	-	.77	-
3	49.0	48.0	47.1	47.1	.31	-	63.3	54.1	50.6	49.2	.78	-
4	49.7	49.2	48.0	47.2	.55	-	64.3	60.4	56.2	49.7	.84	31.95
5	51.0	47.2	47.2	47.2	.50	-	64.8	63.1	50.8	50.1	.56	-
6	51.0	47.6	47.1	47.1	.81	-	65.3	61.1	50.0	50.0	.64	-
7	51.6	51.0	48.0	46.9	.61	32.19	64.8	61.1	48.8	48.8	.69	-
8	52.1	48.6	46.8	46.5	.58	-	66.8	59.9	50.8	50.8	.67	33.55
9	-	-	-	-	.71	-	67.6	61.8	50.0	50.0	.68	-
10	51.8	48.9	47.0	46.8	.70	-	-	-	-	-	.82	-
11	-	-	-	-	31.88	-	68.9	61.2	51.9	49.9	.74	-
12	55.0	48.4	46.5	46.0	30.94	-	69.6	54.0	53.4	52.2	.82	-
13	56.1	47.9	46.1	46.1	.67	-	68.9	53.4	51.9	51.9	31.86	-
14	56.0	52.9	46.0	46.0	30.98	33.10	-	-	-	-	-	-
15	54.3	49.9	45.8	45.4	31.11	-	61.6	61.6	54.0	52.7	31.82	-
16	54.8	49.3	46.2	46.2	.27	-	61.7	61.7	54.8	52.8	.60	-
17	55.7	48.0	46.3	45.8	31.21	-	61.6	61.6	56.3	52.8	.61	-
18	55.6	53.8	46.7	45.4	30.94	-	61.6	61.6	54.5	52.8	.61	31.59
19	56.9	49.7	46.8	45.4	.89	33.10	61.6	61.6	54.3	52.7	.80	-
20	58.3	50.1	47.1	46.0	.97	-	62.4	62.2	54.7	53.9	.49	-
21	58.7	53.6	46.5	46.1	.78	-	63.5	62.4	54.6	52.8	.60	-
22	59.1	56.1	48.8	46.7	30.67	-	63.8	63.8	54.2	52.7	.46	-
23	60.8	56.7	48.8	46.2	31.25	-	63.9	62.3	52.0	51.1	.61	-
24	59.7	52.8	47.4	46.2	.44	-	64.9	61.7	51.9	50.7	.71	-
25	60.1	58.9	48.5	47.2	.24	-	65.1	62.7	53.9	51.8	.61	32.68
26	61.3	60.1	48.5	47.8	.76	-	67.5	58.8	54.0	51.1	.72	-
27	-	-	-	-	31.90	-	68.2	56.7	53.0	50.2	.60	-
28	57.8	49.3	46.9	46.9	-	33.11	66.0	57.4	55.9	51.1	.54	-
29	-	-	-	-	31.40	-	69.2	58.0	55.3	52.7	.47	-
30	59.2	50.0	47.0	47.1	.16	-	70.9	57.8	53.3	51.8	31.37	-
31	-	-	-	-	31.28	-						
Mean	55.1	50.9	47.1	46.5	31.32	32.88	65.2	59.8	53.1	51.3	31.66	32.44

Table 13 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1959

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	75'	0'	75'	0'	30'	50'	75'	0'	75'
1	71.3	61.2	53.7	51.2	30.88	-	-	-	-	-	-	-
2	71.7	61.2	53.6	52.0	31.26	32.57	-	-	-	-	-	-
3	70.1	60.4	54.7	52.1	31.07	-	-	-	-	-	-	-
4	70.9	59.7	52.9	52.2	-	-	-	-	-	-	-	-
5	71.0	62.0	52.9	52.9	31.23	-	72.8	59.8	56.1	56.1	31.13	
6	71.7	57.8	52.7	51.9	.21	-	69.7	69.7	68.3	67.0	.28	31.21
7	71.8	68.0	52.1	51.6	.25	-	70.1	67.6	66.8	66.5	.13	-
8	71.8	68.0	53.1	52.2	.31	-	69.2	67.2	66.9	66.4	31.17	-
9	72.0	60.0	54.0	52.7	.34	-	70.0	68.0	66.2	64.9	-	-
10	73.1	56.0	51.7	51.1	.34	-	70.0	67.7	66.9	66.7	31.18	-
11	71.1	55.1	51.1	50.9	.30	-	70.8	67.5	66.8	66.2	.23	-
12	71.9	62.9	51.1	50.8	.30	-	-	-	-	-	.24	-
13	71.7	60.0	53.9	50.9	31.13	-	71.6	69.0	64.9	62.2	.28	31.54
14	71.9	55.8	54.1	51.7	30.22	-	-	-	-	-	31.32	-
15	72.4	57.3	53.3	53.2	.22	-	-	-	-	-	-	-
16	72.1	56.0	53.0	51.9	.22	-	-	-	-	-	31.26	-
17	71.4	56.0	55.0	53.8	.11	-	72.3	66.7	58.1	-	30.91	-
18	71.0	55.9	55.2	53.9	.93	-	75.1	70.5	66.1	56.7	31.56	-
19	71.4	51.5	47.7	47.6	.32	-	-	-	-	-	-	-
20	71.5	49.8	49.2	49.2	.95	-	75.2	67.5	63.4	56.2	31.30	32.01
21	71.1	51.7	48.6	48.0	.91	-	75.2	69.7	66.4	56.9	.52	-
22	71.6	52.1	49.0	47.9	.69	-	75.7	71.9	57.0	50.2	31.43	-
23	72.3	50.9	49.0	47.9	30.91	-	-	-	-	-	-	-
24	72.3	52.0	47.1	47.0	31.13	-	74.0	73.5	63.0	55.7	31.49	-
25	66.7	48.3	47.7	47.0	30.93	-	73.5	73.8	66.0	54.7	.30	-
26	67.7	48.8	46.9	46.9	.79	-	75.0	74.5	57.8	55.4	.41	-
27	71.8	47.7	47.0	47.1	.88	-	76.1	64.6	57.5	56.5	.53	31.67
28	74.5	52.0	48.1	47.7	.92	-	74.4	72.2	58.7	-	.35	-
29	75.9	51.1	48.2	47.7	.92	-	77.2	65.8	59.5	-	.44	-
30	74.5	49.9	48.1	47.2	.91	-	-	-	-	-	.32	-
31	75.9	51.3	48.2	48.0	30.95	-	76.8	67.7	59.8	58.0	31.37	
Mean	71.8	55.8	51.1	50.2	30.92		-	-	-	-	-	31.61

Table 13 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1959

	September						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	75'	0'	75'	0'	30'	50'	75'	0'	75'
1	76.8	62.0	58.1	57.1	31.26	-	71.1	70.6	70.3	59.6	31.46	32.19
2	76.9	64.9	56.1	55.9	.28	-	71.3	70.9	59.9	55.9	.27	-
3	77.6	69.0	56.0	55.2	.31	32.05	71.8	71.1	68.9	-	.30	-
4	78.3	72.5	60.4	58.5	.26	-	69.9	69.9	69.8	57.7	31.71	-
5	76.9	71.8	58.9	58.6	.27	-	-	-	-	-	32.08	-
6	76.8	68.7	59.8	59.2	.30	-	-	-	-	-	32.03	-
7	77.2	67.1	59.8	-	.30	-	69.1	68.2	-	-	31.63	-
8	76.9	72.7	59.2	59.0	.26	-	-	-	-	-	.42	32.15
9	76.9	63.8	58.5	-	.32	-	71.3	70.0	62.0	59.2	31.45	-
10	77.5	73.0	59.0	55.8	31.33	32.04	71.5	70.0	57.2	56.0	30.82	-
11	-	-	-	-	-	-	-	-	-	-	31.34	-
12	-	-	-	-	31.41	-	-	-	-	-	.52	-
13	74.4	73.7	68.5	64.0	.29	-	68.7	68.2	67.9	57.1	.61	-
14	-	-	-	-	31.42	-	-	-	-	-	31.98	-
15	-	-	-	-	-	-	-	-	-	-	32.18	32.01
16	72.4	72.6	72.0	61.5	31.39	-	-	-	-	-	31.84	-
17	70.9	70.9	70.9	70.8	.48	31.49	66.7	66.7	66.7	66.7	31.90	-
18	70.9	70.8	70.8	70.8	.62	-	-	-	-	-	32.22	-
19	-	-	-	-	.72	-	-	-	-	-	.08	-
20	69.0	69.0	69.1	69.1	.66	-	-	-	-	-	.15	-
21	69.2	69.1	69.1	69.1	.69	-	65.2	65.2	65.1	64.8	.14	-
22	70.0	69.7	66.3	64.6	.55	-	63.3	63.3	63.3	63.3	.16	32.06
23	70.2	69.6	64.5	60.0	.57	-	60.2	60.2	60.2	60.2	.19	-
24	70.2	70.1	66.2	-	.46	31.55	63.1	62.9	63.0	63.0	.02	-
25	71.5	71.0	66.0	58.8	.54	-	63.1	63.1	62.8	62.3	.06	-
26	70.9	70.8	65.7	60.0	.58	-	62.8	62.6	62.6	62.3	32.02	-
27	71.1	70.9	64.0	59.0	.60	-	63.0	63.0	63.0	62.9	31.93	-
28	-	-	-	-	31.59	-	61.8	61.8	61.8	61.8	.86	-
29	-	-	-	-	-	-	62.0	61.9	61.9	61.9	31.92	32.03
30	72.3	72.2	64.8	58.5	31.56	-	61.8	61.8	61.8	61.8	32.02	-
31							61.4	61.2	61.2	61.2	31.94	-
Mean	73.7	69.8	63.6	61.3	31.46	31.78	-	-	-	-	31.81	32.09

Table 13 (cont'd)

FIVE FATHOM BANK LIGHTSHIP 38°47.3'N. 74°34.6'W. Depth of water - 87 feet

1959

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	75'	0'	75'	0'	30'	50'	75'	0'	75'
1	61.6	61.8	61.2	61.1	32.06	-	52.9	53.1	53.1	53.2	31.10	-
2	61.3	61.3	61.4	61.7	.18	-	52.3	52.3	53.0	53.0	32.53	-
3	60.6	60.6	60.7	60.8	.20	-	53.0	52.8	52.7	53.1	32.71	-
4	60.4	60.4	60.5	60.7	.24	-	52.0	52.1	52.2	52.2	-	-
5	60.8	60.9	60.9	60.0	.22	32.36	49.9	49.8	49.8	49.9	-	-
6	61.7	61.6	60.9	58.9	.26	-	50.8	50.7	50.7	50.7	32.27	-
7	-	-	-	-	.35	-	51.0	51.0	51.0	51.0	.23	-
8	59.2	59.2	59.2	59.2	.18	-	50.0	50.3	50.7	51.0	.07	-
9	57.9	57.8	57.8	-	.14	-	50.7	50.9	51.9	52.0	.42	-
10	57.4	57.5	57.6	57.7	.18	-	50.8	51.3	51.9	-	.55	-
11	57.0	57.0	57.0	57.0	.12	-	50.0	50.3	51.3	51.7	32.36	-
12	57.1	57.1	57.1	57.1	.12	32.68	50.0	50.3	50.4	51.2	31.91	-
13	-	-	-	-	.30	-	50.3	50.3	51.0	51.1	32.05	-
14	57.1	57.1	57.0	57.0	.17	-	49.0	49.0	49.2	49.8	31.81	-
15	57.0	57.0	57.0	57.0	.09	-	-	-	-	-	-	-
16	56.2	56.1	56.0	56.0	.14	-	49.3	49.3	-	-	32.12	-
17	54.4	55.1	55.0	-	.24	-	50.0	50.0	50.8	51.1	.25	32.49
18	54.9	55.0	55.0	55.0	.34	-	-	49.7	50.0	50.4	.11	-
19	55.4	55.6	55.7	55.7	.30	32.31	50.0	50.0	50.0	50.0	.55	-
20	55.0	55.1	55.2	55.2	.38	-	49.1	49.0	49.0	49.0	.54	-
21	55.1	55.2	55.1	55.1	.37	-	48.2	48.3	48.5	48.5	.46	-
22	54.9	54.9	54.9	55.1	.35	-	47.3	47.9	47.9	47.9	.32	-
23	54.3	54.4	54.4	54.4	.32	-	46.0	46.1	46.1	46.1	32.02	-
24	54.2	54.2	54.1	54.1	.22	-	45.7	45.7	45.8	45.8	31.85	31.60
25	54.9	55.0	55.0	55.0	32.30	-	45.0	45.2	45.5	45.8	.75	-
26	52.8	53.1	53.7	54.1	31.76	32.30	45.0	45.3	45.6	45.9	.78	-
27	53.8	53.9	54.5	54.9	31.98	-	45.5	46.0	46.0	46.2	.99	-
28	54.8	54.8	54.8	54.8	32.40	-	46.0	46.0	46.0	46.0	31.99	-
29	54.1	54.1	54.1	54.1	.48	-	46.5	46.8	46.9	46.9	32.02	-
30	53.2	53.2	53.2	53.2	32.57	-	45.5	45.5	45.7	45.8	31.73	-
31							45.1	45.2	45.3	45.3	31.46	31.26
Mean	56.7	56.8	56.8	56.7	32.23	32.41	48.9	49.0	49.2	49.3	32.11	-

Winter Quarter Lightship (Figure 14, Table 14)

After two months of near normal temperatures in January and February, surface temperatures rose rapidly and remained well above the mean throughout the year. This trend more nearly parallels air temperature anomalies than do the records at Five Fathom Bank to the north and Chesapeake to the south. The highest surface temperatures occurred in the first decade of September; the mean for that month was the highest on record.

The three distinct intrusions of cold water at the bottom in July, August and September were also observed at Five Fathom Bank and Chesapeake stations. The maximum bottom temperature appeared on September 19th after force 6 northeasterly winds mixed the water column. In terms of 10-day means the bottom maximum of 66°F equals the maximum of 1957.

Surface salinity during the year was slightly above those for 1956 and 1958 but well below those for 1957.

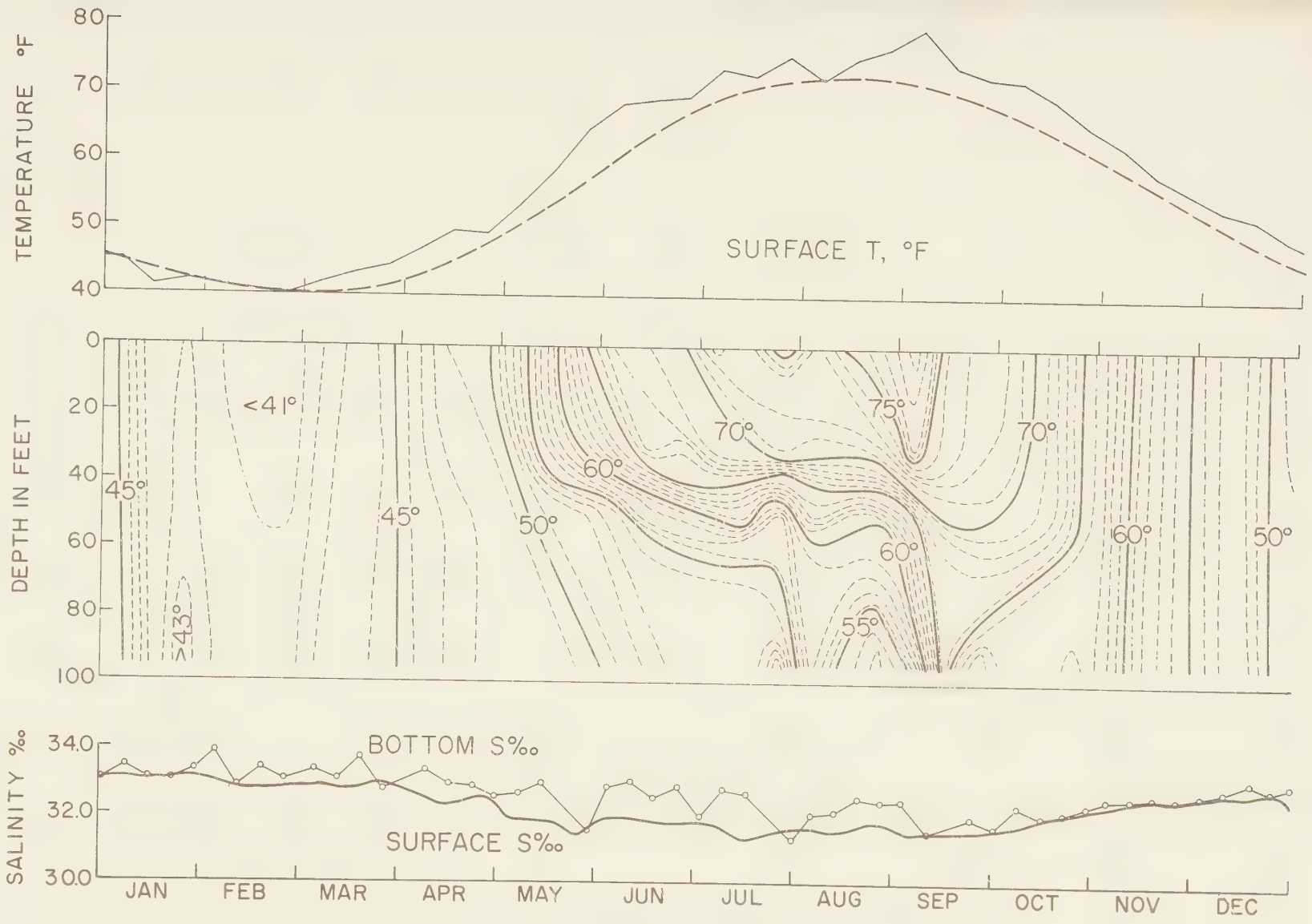

Figure 14. Winter Quarter Lightship, 1959. (Dashed line in upper diagram, mean for period 1925-1940.)

Table 14

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1959

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	46.2	46.3	46.5	46.5	33.10	33.02	42.0	42.0	42.0	42.1	-	-
2	46.1	46.6	46.7	46.9	32.94	-	41.0	41.0	41.0	41.0	33.02	-
3	46.1	46.5	46.6	46.8	.97	-	40.1	40.4	41.3	41.9	32.99	-
4	46.4	46.8	46.9	-	32.02	-	41.8	41.9	41.9	41.9	33.21	-
5	-	-	-	-	33.29	-	40.2	40.9	42.1	42.2	32.64	33.88
6	-	-	-	-	.39	-	39.9	40.6	41.1	42.1	32.55	-
7	45.0	45.1	45.1	45.1	.11	-	41.0	41.1	41.6	42.2	33.00	-
8	44.2	44.9	45.0	45.2	.66	33.44	41.7	41.8	41.8	41.9	.02	-
9	43.2	43.7	43.8	43.8	.26	-	42.2	42.4	42.5	42.6	33.18	-
10	43.2	43.5	43.6	-	.28	-	41.2	41.2	41.2	41.5	32.83	-
11	42.8	43.0	43.1	43.1	.30	-	41.9	41.8	42.0	42.2	33.00	-
12	41.2	41.1	41.3	41.8	.09	-	40.2	40.7	40.8	40.8	32.82	32.83
13	41.4	41.8	41.9	41.9	33.16	-	40.9	41.0	41.1	41.2	.58	-
14	40.8	40.8	40.9	41.1	32.94	-	-	-	-	-	32.16	-
15	40.8	40.9	40.9	41.5	.89	33.05	-	-	-	-	33.01	-
16	39.9	40.9	41.1	42.1	.55	-	41.1	41.1	41.1	41.1	32.63	-
17	40.4	40.9	40.9	41.0	32.91	-	-	-	-	-	.63	-
18	40.9	41.3	41.8	42.6	33.05	-	41.1	41.1	41.3	42.9	32.62	-
19	41.1	41.3	41.4	41.9	.09	-	41.1	41.1	41.1	41.2	33.02	33.40
20	41.4	41.6	41.9	42.9	33.21	-	38.1	38.6	40.1	40.3	32.71	-
21	40.9	41.1	41.4	44.2	32.96	-	40.3	40.7	41.5	42.3	33.12	-
22	42.2	42.2	42.3	42.5	33.05	33.05	39.2	39.7	39.9	41.1	32.72	-
23	40.9	41.1	41.1	44.2	32.86	-	39.9	39.9	41.0	41.6	.66	-
24	40.9	42.2	43.1	44.2	32.74	-	39.9	40.0	41.1	42.1	32.55	-
25	43.3	43.6	43.9	43.9	33.34	-	40.9	41.0	41.1	41.2	33.14	-
26	42.7	42.9	43.0	44.1	33.13	-	40.4	40.8	40.8	40.8	33.04	33.05
27	41.9	42.1	42.2	42.2	32.97	-	39.8	40.3	41.0	41.1	32.76	-
28	42.9	43.0	43.1	43.1	33.26	-	40.6	40.4	40.5	40.5	32.87	-
29	42.9	42.9	43.1	43.2	.36	33.35						
30	41.9	42.1	42.2	43.6	.33	-						
31	42.0	42.1	42.3	43.5	33.12	-						
Mean	42.5	42.8	43.0	43.4	33.08	33.18	40.7	40.9	41.2	41.6	32.83	33.29

Table 14 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1959

March

Day	Temperature °F 0'	30'	50'	85'	Salinity °/oo 0'	85'
1	41.1	41.8	41.9	43.1	32.80	-
2	41.3	41.5	41.7	41.8	33.24	-
3	41.1	42.1	42.5	42.8	33.02	-
4	41.7	41.9	42.1	42.2	32.82	-
5	42.1	42.2	42.7	42.8	33.21	33.33
6	-	-	-	-	-	-
7	42.4	42.3	42.7	43.8	33.21	-
8	42.8	42.9	43.0	43.7	33.16	-
9	42.1	42.1	43.0	43.5	32.26	-
10	42.3	42.4	43.4	43.9	.29	-
11	43.2	43.1	43.3	43.3	.81	-
12	43.2	43.3	43.3	43.3	.94	33.06
13	42.6	42.6	42.7	42.7	.84	-
14	42.7	42.9	43.0	43.0	.74	-
15	43.2	43.2	43.3	43.8	.60	-
16	43.3	43.3	43.6	43.9	.66	-
17	43.7	43.7	43.7	43.8	.75	-
18	43.8	43.8	43.8	44.0	.90	-
19	43.1	43.2	43.3	43.8	.95	33.71
20	43.4	43.4	43.8	44.0	.59	-
21	-	-	-	-	.63	-
22	44.2	44.2	44.2	44.3	.72	-
23	44.0	44.0	44.0	44.0	.86	-
24	44.0	44.0	44.3	44.4	.91	-
25	44.7	44.2	44.3	44.9	.97	-
26	45.5	45.0	44.8	44.8	.86	32.79
27	-	-	-	-	32.83	-
28	-	-	-	-	-	-
29	43.7	43.8	43.8	43.8	-	-
30	-	-	-	-	32.82	-
31	43.7	43.7	43.7	43.8	33.62	-
Mean	43.0	43.1	43.3	43.6	32.86	33.22

April

Day	Temperature °F 0'	30'	50'	85'	Salinity °/oo 0'	85'
1	45.1	45.1	45.1	45.1	33.24	-
2	45.6	45.3	45.3	45.3	32.94	-
3	-	-	-	-	.50	-
4	45.3	45.4	45.8	45.9	.28	-
5	-	-	-	-	.43	-
6	46.5	46.2	46.0	46.0	.55	-
7	-	46.1	45.9	45.9	.60	-
8	47.2	47.1	46.9	46.2	.60	-
9	48.3	48.5	48.1	46.8	.65	33.35
10	49.8	49.1	47.7	46.8	.54	-
11	49.9	49.7	48.8	46.8	32.36	-
12	-	-	-	-	-	-
13	47.1	47.2	47.2	47.2	32.88	-
14	47.0	47.0	47.0	47.1	33.00	-
15	47.2	47.0	47.0	47.0	32.69	-
16	48.6	47.3	47.1	47.0	.47	32.96
17	50.0	47.6	47.1	47.1	32.27	-
18	51.8	49.0	47.7	47.2	31.88	-
19	51.8	49.7	47.1	47.0	.45	-
20	51.8	49.8	47.1	47.1	31.52	-
21	49.9	48.0	47.4	47.2	32.41	-
22	50.1	49.9	49.0	48.8	.94	-
23	47.0	47.0	47.0	46.9	.84	32.85
24	47.9	47.7	47.5	47.3	.79	-
25	47.9	47.7	47.5	47.5	.74	-
26	50.1	49.9	49.1	48.8	32.78	-
27	51.3	49.5	48.1	48.1	31.97	-
28	49.9	49.8	48.8	48.5	32.16	-
29	48.8	48.8	48.8	48.8	.42	-
30	49.4	48.9	48.8	48.8	32.48	32.56
Mean	48.7	47.9	47.4	47.1	32.50	32.93

Table 14 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1959

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	49.2	48.9	48.3	48.0	32.28	-	66.2	58.4	52.1	51.1	31.51	-
2	51.3	48.9	48.7	48.0	32.18	-	68.2	60.6	52.6	52.1	.46	-
3	51.2	49.8	49.0	48.0	31.87	-	66.2	63.1	52.0	50.8	31.83	-
4	52.8	51.4	49.0	47.6	.73	-	67.6	63.1	59.6	52.8	32.13	32.86
5	53.6	50.1	48.9	48.1	.95	-	67.2	64.8	49.7	48.0	.16	-
6	55.4	51.4	48.9	48.0	.67	-	68.8	64.2	55.0	51.8	.16	-
7	55.3	53.6	49.2	48.0	.60	32.63	68.3	61.7	54.1	50.3	.22	-
8	56.1	52.6	49.6	48.0	.61	-	70.6	66.4	55.9	51.6	.18	-
9	54.7	53.2	49.9	48.8	.76	-	70.7	69.1	54.2	50.8	32.21	-
10	55.3	50.6	49.0	48.2	.79	-	70.7	61.3	53.8	50.0	31.82	-
11	56.8	54.7	49.6	48.1	.67	-	72.2	68.1	51.6	50.2	.66	33.00
12	57.7	56.9	49.7	48.1	.79	-	72.4	68.6	55.7	51.1	.66	-
13	59.2	53.6	48.8	47.9	.77	-	73.8	67.6	55.1	51.2	.75	-
14	59.1	56.7	54.3	47.8	.80	32.96	66.8	66.6	54.1	50.1	.82	-
15	58.1	58.0	52.1	48.0	31.90	-	67.7	66.8	56.7	52.0	.81	-
16	56.9	56.8	53.9	48.0	32.01	-	68.1	67.7	59.0	50.5	.83	-
17	58.1	57.2	50.9	48.2	.05	-	66.2	66.2	63.8	53.1	31.80	-
18	58.3	57.8	49.8	48.3	32.06	-	67.9	66.9	60.9	53.5	32.12	32.53
19	59.1	58.2	51.0	49.0	31.82	-	67.1	67.0	60.7	54.7	31.91	-
20	61.3	58.2	51.1	48.8	.93	-	67.4	66.7	59.5	54.7	.91	-
21	63.6	61.9	51.7	48.9	.01	-	68.2	67.1	59.7	53.8	.90	-
22	63.7	61.0	50.7	48.5	.17	-	-	-	-	-	.80	-
23	65.0	59.5	51.3	48.8	.17	-	68.5	66.9	59.2	50.8	.76	-
24	64.8	58.2	50.7	48.8	.07	-	68.4	67.3	64.5	-	.72	-
25	63.2	57.4	50.9	49.9	.54	-	69.6	65.4	56.9	53.2	.72	32.86
26	64.6	60.3	50.8	50.2	.36	-	70.4	66.1	54.8	52.5	.71	-
27	65.2	60.8	51.0	50.0	31.32	-	71.2	65.6	55.6	52.8	.68	-
28	66.7	66.1	50.9	49.0	30.94	31.52	67.4	64.8	60.9	54.2	.76	-
29	64.8	57.3	50.6	49.0	31.46	-	72.1	66.1	57.2	55.1	.73	-
30	64.7	61.6	56.5	49.0	32.07	-	-	-	59.2	55.7	31.77	-
31	64.7	58.8	52.9	49.5	32.11	-						
Mean	59.0	56.2	50.6	48.5	31.69	-	68.9	65.5	56.7	52.1	31.85	32.81

Table 14 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1959

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	74.9	65.3	57.9	54.5	31.87	-	-	-	-	-	-	-
2	75.0	66.6	57.8	53.7	.77	31.98	-	-	-	-	-	-
3	73.2	68.7	61.8	55.8	31.89	-	74.7	71.8	58.6	55.3	31.73	-
4	72.9	69.2	61.6	55.7	32.00	-	69.9	68.9	57.9	56.9	.68	-
5	73.1	71.9	60.1	54.1	31.94	-	69.1	68.7	59.2	56.6	.27	-
6	73.9	72.5	61.7	52.9	.85	-	71.4	70.1	62.1	61.1	.85	32.05
7	72.9	72.6	63.1	52.7	.51	-	72.3	72.0	68.2	60.5	.67	-
8	72.5	70.6	61.8	53.1	.67	-	71.7	70.4	67.1	60.8	.71	-
9	73.9	73.0	56.1	53.4	.76	32.80	73.9	71.3	66.5	57.3	.75	-
10	74.7	64.8	59.4	51.6	.62	-	74.6	72.8	69.8	57.7	.71	-
11	71.9	68.4	65.7	50.3	.57	-	75.2	73.3	70.3	56.8	.40	-
12	71.7	71.0	61.1	50.8	.61	-	74.2	72.1	64.0	57.8	.19	-
13	72.5	72.1	61.8	51.2	.32	-	74.2	71.0	63.6	59.2	.21	32.13
14	73.1	70.8	60.2	52.7	.42	-	74.9	72.2	61.4	53.4	.62	-
15	72.9	70.0	61.1	52.8	.39	-	76.4	71.5	64.4	53.2	.55	-
16	72.8	71.6	60.8	55.1	31.26	32.67	75.9	74.0	60.5	54.0	.48	-
17	72.7	69.7	64.0	58.0	30.53	-	75.6	71.2	56.0	52.1	.71	-
18	72.1	66.0	61.0	59.1	31.29	-	74.0	73.5	54.1	51.6	.83	-
19	72.8	72.2	59.8	55.2	30.85	-	75.5	67.7	58.4	52.4	.76	-
20	74.5	64.7	56.6	51.0	31.18	-	75.3	61.8	57.2	53.6	.98	32.56
21	73.3	69.2	55.1	51.0	.50	-	76.6	58.6	56.4	53.1	.81	-
22	76.2	76.0	60.8	51.6	.55	-	77.2	63.7	57.3	50.0	.54	-
23	76.9	75.1	62.8	51.0	.57	-	75.0	72.4	59.0	52.9	.80	-
24	75.6	74.5	57.9	50.1	.41	-	74.7	74.0	56.1	54.7	.88	-
25	74.5	73.5	50.4	49.0	.70	-	75.0	71.3	56.3	53.2	.89	-
26	75.5	73.2	55.8	49.5	.60	-	76.1	75.1	58.8	52.8	.93	-
27	76.7	72.2	58.0	50.8	.46	-	77.0	76.0	62.0	52.1	.94	32.43
28	75.8	69.2	53.5	-	.54	-	78.7	76.9	67.8	52.1	.95	-
29	75.0	72.8	57.4	51.0	31.09	-	78.2	75.1	63.1	52.2	.87	-
30	77.0	57.3	53.5	50.5	-	31.30	78.0	74.0	67.8	51.4	.81	-
31	-	-	-	-	31.50	-	-	-	-	-	31.86	-
Mean	74.0	70.2	59.3	52.7	31.51	32.19	74.8	71.1	61.6	54.8	31.70	32.29

Table 14 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1959

	September						October					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	79.1	78.0	60.3	52.5	31.72	-	-	-	-	-	31.62	31.68
2	79.8	76.8	63.0	52.0	.80	-	-	-	-	-	-	-
3	81.6	77.0	67.0	52.1	.73	32.45	70.1	70.1	69.9	69.3	31.76	-
4	80.1	79.4	68.0	54.5	.29	-	70.0	69.9	69.9	69.9	.96	-
5	79.7	76.8	61.8	55.0	.41	-	71.4	70.5	70.0	67.5	.78	-
6	79.0	77.7	65.8	61.1	.37	-	71.8	71.1	69.9	63.8	.68	-
7	78.8	77.3	67.2	58.5	.36	-	72.1	71.9	69.5	60.6	.74	-
8	79.3	74.8	60.2	58.2	.42	-	73.6	73.1	70.5	59.9	.74	32.34
9	79.1	77.8	64.8	56.2	.39	-	73.1	73.0	69.2	58.8	.47	-
10	79.3	75.0	67.3	55.9	.26	-	73.1	72.8	69.3	56.0	.50	-
11	76.9	76.5	66.1	57.8	.63	31.51	73.2	72.8	71.7	56.8	.50	-
12	75.5	75.4	75.3	63.5	.52	-	70.8	70.9	69.7	57.5	.71	-
13	75.8	74.5	72.3	66.0	.50	-	70.2	70.1	69.8	56.5	.79	-
14	75.0	73.0	67.3	65.9	.55	-	69.3	69.8	69.9	55.7	31.65	-
15	75.1	75.0	69.0	62.0	.43	-	68.1	68.1	68.1	68.0	32.02	32.00
16	74.3	74.2	73.3	60.6	.43	-	68.3	68.3	68.2	67.1	.15	-
17	72.2	72.1	72.0	72.0	.52	-	68.4	68.2	68.1	68.1	.03	-
18	72.1	71.4	71.5	70.0	.46	-	67.7	67.7	67.6	67.5	.13	-
19	71.8	71.8	71.8	71.8	.77	-	67.5	67.2	67.1	67.1	.18	-
20	71.2	71.0	70.9	70.9	.75	-	66.9	66.9	66.9	66.9	.22	-
21	71.8	70.9	70.9	70.9	.75	-	66.8	66.8	66.7	66.1	.17	-
22	71.8	71.5	71.2	66.6	.62	-	66.4	66.4	66.3	66.2	.11	32.10
23	72.1	72.0	71.3	59.1	.57	-	65.9	65.8	65.7	65.5	32.14	-
24	72.1	72.0	70.6	60.9	.56	31.99	66.1	66.1	65.7	65.1	31.94	-
25	73.2	72.1	71.3	55.9	.55	-	66.2	65.9	65.6	64.5	31.97	-
26	71.9	71.9	70.0	60.0	.60	-	65.2	65.6	65.4	64.8	32.07	-
27	72.4	72.0	70.5	60.3	.66	-	65.1	65.2	65.2	64.8	.13	-
28	72.6	72.6	70.2	61.3	.64	-	64.1	64.8	64.8	64.8	.26	-
29	73.2	72.4	71.4	59.6	.67	-	64.0	64.1	64.1	64.1	.29	32.31
30	73.4	73.2	69.9	58.2	31.60	-	63.9	63.9	63.8	63.8	.22	-
31							63.8	63.7	63.5	63.6	32.18	-
Mean	75.3	74.2	68.7	61.0	31.55	-	68.4	68.3	67.7	63.8	31.94	32.09

Table 14 (cont'd)

WINTER QUARTER LIGHTSHIP 37°55'05"N. 74°56'04"W. Depth of water - 96 feet

1959

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	85'	0'	85'	0'	30'	50'	85'	0'	85'
1	63.2	63.2	63.1	63.0	32.29	-	54.0	54.2	54.2	54.2	32.72	-
2	63.3	63.2	63.2	63.2	.33	-	54.0	54.0	54.0	54.0	.71	-
3	62.8	62.7	62.7	62.5	.38	-	53.9	53.9	53.9	53.9	.71	32.70
4	62.9	62.9	62.8	62.5	.31	-	53.1	53.2	53.3	53.3	.79	-
5	63.6	63.2	63.0	61.8	32.29	32.52	53.2	53.2	53.2	53.2	.70	-
6	63.9	63.8	63.0	61.5	-	-	53.5	53.6	53.6	53.5	.69	-
7	-	-	-	-	-	-	53.0	53.2	53.1	53.1	.67	-
8	-	-	-	-	-	-	52.5	52.7	52.7	52.7	.65	-
9	60.1	60.1	60.1	60.0	-	-	52.2	52.8	52.9	53.0	.74	-
10	59.7	59.8	59.8	59.8	32.54	-	52.2	52.9	52.8	52.8	.56	32.86
11	59.8	59.6	59.4	59.2	.55	-	52.3	52.6	52.7	53.0	.86	-
12	59.4	59.4	59.4	59.2	.52	32.56	53.0	52.9	52.9	54.3	.55	-
13	59.6	59.1	59.0	58.8	.56	-	52.8	52.9	53.0	54.8	.64	-
14	59.6	59.1	58.8	58.8	32.53	-	52.2	52.2	52.2	52.2	.76	-
15	-	-	-	-	-	-	52.0	52.1	52.1	52.1	.82	-
16	-	-	-	-	-	-	51.9	51.9	51.9	51.9	32.83	-
17	57.0	56.9	56.9	56.9	32.43	-	51.8	51.5	52.4	52.9	-	-
18	-	-	-	-	-	-	50.9	50.9	50.9	51.4	32.44	33.14
19	56.9	56.9	56.9	56.8	32.51	32.62	-	-	-	-	-	-
20	56.5	56.5	56.4	56.3	.51	-	50.9	50.9	50.9	50.8	32.82	-
21	56.1	56.1	56.1	56.1	.47	-	50.3	50.7	50.7	50.7	.84	-
22	56.4	56.4	56.4	56.3	.50	-	48.9	48.9	48.9	48.9	.69	-
23	55.3	55.4	55.4	55.6	.45	-	48.2	48.6	48.7	48.7	32.60	-
24	55.7	55.7	55.6	55.7	.46	-	49.0	49.1	49.1	49.1	33.01	32.88
25	56.0	56.0	56.0	55.9	32.52	-	49.0	49.0	49.0	49.0	32.98	-
26	55.9	55.9	55.9	55.9	-	32.56	48.2	48.5	48.8	49.3	.87	-
27	55.9	55.9	55.9	55.8	32.49	-	49.0	49.0	49.0	49.7	32.92	-
28	56.0	56.0	56.0	56.0	.58	-	49.8	49.8	49.9	49.9	33.06	-
29	-	-	-	-	32.65	-	48.1	48.9	49.6	50.0	32.26	-
30	54.9	54.9	54.9	54.9	-	-	49.2	49.4	49.3	49.3	32.99	-
31							49.4	49.5	49.5	49.4	33.03	33.03
Mean	58.8	58.7	58.6	58.4	32.47	32.56	51.3	51.4	51.5	51.7	32.76	32.92

Chesapeake Lightship (Figure 15, Table 15)

After a cold January, surface temperatures remained near or above normal into early November. In mid-August they rose rapidly and continued to rise into early September. An abrupt overturn between the observations of September 11th and 12th produced a bottom temperature maximum higher than any seen during the previous three years. Owing to bathythermograph malfunction, the final overturn was not observed. The year ended with temperatures close to the mean.

Surface salinities vary greatly here at the entrance to Chesapeake Bay. The pattern for this year shows no marked departure from that of previous years.

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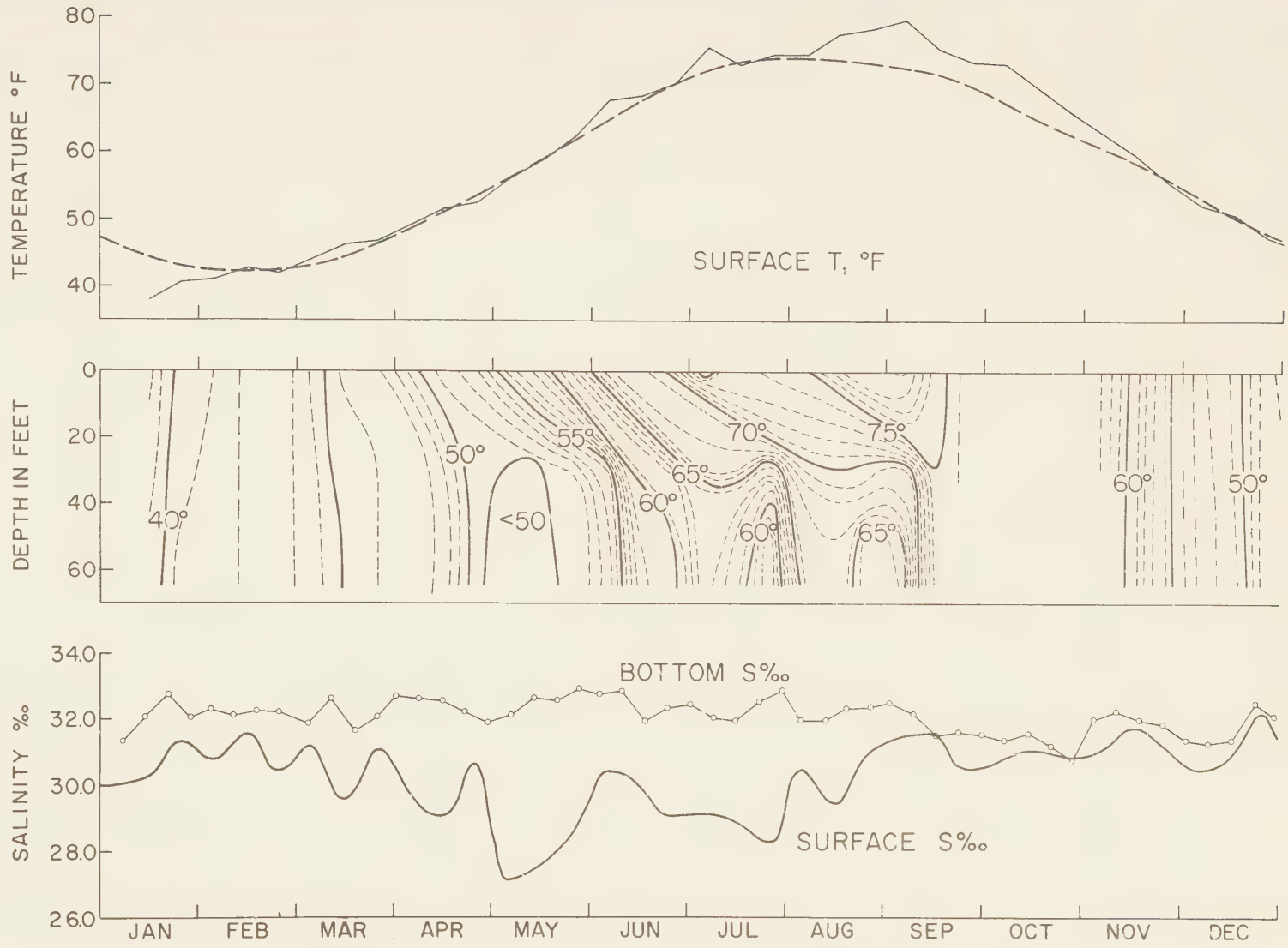

Figure 15. Chesapeake Lightship, 1959. (Dashed line in upper diagram, mean for period 1947-1956.)

Table 15

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1959

	January						February					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	65'	0'	65'	0'	30'	50'	65'	0'	65'
1	-	-	-	-	31.53	-	41.6	41.5	41.4	41.5	31.98	-
2	-	-	-	-	.33	-	40.7	40.6	40.7	40.7	32.33	-
3	-	-	-	-	.32	-	40.1	40.7	40.7	40.9	32.15	-
4	-	-	-	-	31.57	-	40.9	40.9	40.9	40.9	28.29	32.30
5	-	-	-	-	-	-	40.9	41.3	41.4	41.6	30.25	-
6	-	-	-	-	-	-	41.2	41.4	41.7	41.8	30.99	-
7	-	-	-	-	25.06	31.36	41.1	41.1	41.2	41.2	31.36	-
8	-	-	-	-	26.38	-	40.9	41.2	41.3	41.3	29.23	-
9	-	-	-	-	31.46	-	40.8	41.2	41.3	41.3	30.16	-
10	-	-	-	-	.58	-	42.0	41.8	41.9	41.9	.85	-
11	38.5	38.4	38.5	38.6	.61	-	42.1	42.1	42.1	42.1	30.26	32.11
12	38.3	38.7	38.8	38.8	31.44	-	42.1	42.1	42.1	42.1	32.15	-
13	38.5	39.7	40.3	40.3	29.62	-	42.1	42.1	42.1	42.1	32.05	-
14	38.6	38.6	40.0	40.0	31.14	32.08	42.8	42.2	42.2	42.3	29.46	-
15	38.0	39.0	39.5	39.5	31.64	-	43.0	42.9	42.8	42.8	31.77	-
16	-	-	-	-	-	-	43.1	43.0	43.0	43.0	32.23	-
17	38.8	38.9	39.0	39.5	31.64	-	43.0	42.8	42.8	42.8	32.13	-
18	36.7	37.7	40.0	40.0	28.07	-	43.1	43.0	43.0	43.0	31.70	32.28
19	36.5	39.0	40.2	40.2	.43	-	-	-	-	-	-	-
20	37.4	38.7	39.5	39.6	28.52	-	41.7	41.9	41.9	41.9	32.19	-
21	38.6	38.8	41.1	41.1	29.68	32.72	41.1	42.2	42.1	42.0	30.84	-
22	41.0	41.1	41.5	41.5	31.95	-	41.2	42.7	42.8	42.8	28.01	-
23	40.8	41.1	41.1	41.1	.82	-	41.1	43.1	43.1	43.1	26.33	-
24	40.2	40.8	41.1	41.1	31.18	-	43.0	43.1	43.1	43.1	29.72	-
25	40.0	41.0	41.1	41.1	29.44	-	42.5	42.3	42.4	42.4	32.19	32.22
26	40.9	41.1	41.2	41.2	31.80	-	42.9	42.5	42.6	42.8	32.11	-
27	-	-	-	-	32.03	-	41.8	41.9	42.0	42.0	31.81	-
28	41.0	41.0	41.0	41.1	32.17	32.06	42.6	42.3	42.2	42.2	32.28	-
29	41.1	40.8	40.8	40.8	31.81	-						
30	40.8	41.0	41.0	41.0	31.99	-						
31	41.3	41.3	41.3	41.3	-	-						
Mean	-	-	-	-	30.60	32.06	41.8	42.0	42.0	42.1	30.92	32.23

Table 15 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1959

	March						April					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	65'	0'	65'	0'	30'	50'	65'	0'	65'
1	43.0	43.1	43.1	43.1	32.39	-	45.6	45.5	45.2	45.1	32.69	32.71
2	-	-	-	-	-	-	46.8	45.3	45.2	45.2	31.16	-
3	42.0	42.1	42.1	42.1	32.48	-	47.1	46.1	45.6	45.5	31.66	-
4	43.3	42.4	42.2	42.2	31.66	31.88	48.2	46.3	45.8	45.8	30.13	-
5	43.1	42.3	42.3	42.3	31.80	-	49.5	46.3	46.3	46.3	30.38	-
6	43.0	43.1	43.1	43.1	32.50	-	49.7	46.0	46.0	46.0	28.42	-
7	45.2	44.8	44.8	44.9	29.84	-	50.5	46.5	46.5	46.6	28.50	-
8	45.7	45.2	45.0	45.0	30.18	-	52.4	46.9	46.9	46.9	27.40	32.63
9	45.9	45.4	45.0	45.0	30.58	-	52.0	46.7	46.5	46.4	28.41	-
10	46.8	46.1	44.9	44.9	28.84	-	52.5	46.8	46.7	46.7	.32	-
11	46.8	45.1	44.9	44.9	28.41	32.62	54.5	46.7	46.6	46.6	28.05	-
12	46.2	45.2	44.4	44.2	30.60	-	48.7	48.7	48.5	48.7	32.54	-
13	45.0	45.1	45.0	44.9	31.56	-	-	-	-	-	-	-
14	46.9	45.8	45.4	45.3	27.03	-	48.5	48.0	47.9	47.9	32.53	-
15	46.1	45.8	45.2	45.2	28.50	-	49.5	47.8	47.8	47.8	32.47	32.54
16	47.2	46.3	45.1	45.1	29.50	-	49.2	48.0	47.4	47.3	31.08	-
17	46.9	46.7	45.5	45.1	30.37	-	49.5	47.7	47.5	47.3	31.55	-
18	46.0	46.0	46.0	46.0	.80	31.62	54.9	47.7	47.2	47.2	23.52	-
19	45.9	45.1	45.1	45.1	30.90	-	-	47.1	47.1	47.1	25.45	-
20	46.9	45.9	45.9	45.9	27.88	-	59.0	47.7	47.6	47.5	23.86	-
21	47.2	45.9	45.9	45.9	28.26	-	54.8	48.2	47.9	47.9	29.40	-
22	-	-	-	-	-	-	50.2	50.3	50.2	50.1	32.23	32.23
23	46.0	46.2	46.2	46.2	30.92	-	51.8	51.5	51.3	51.3	.14	-
24	47.2	46.1	46.1	46.1	29.41	-	52.0	50.6	50.6	50.4	32.13	-
25	48.5	46.3	46.2	46.2	29.76	32.06	52.0	50.2	50.0	50.0	30.32	-
26	48.9	46.4	46.1	46.1	30.44	-	54.0	48.4	48.2	48.2	27.71	-
27	48.1	46.6	46.6	46.6	31.19	-	53.0	52.5	52.5	52.6	29.73	-
28	44.8	44.8	44.8	44.8	32.60	-	52.5	50.2	50.0	50.1	30.47	-
29	46.3	46.0	46.0	45.9	.76	-	52.3	50.7	50.7	50.7	31.45	31.92
30	45.9	45.9	45.9	45.9	.76	-	54.0	51.2	51.0	51.1	31.11	-
31	46.1	46.0	46.0	45.9	32.65	-						
Mean	45.9	45.2	45.0	45.0	30.57	32.04	51.2	48.1	48.0	47.9	29.82	32.41

Table 15 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1959

Depth / Day	May Temperature °F 0'	30'	50'	65'	May Salinity °/oo 0'	65'	June Temperature °F 0'	30'	50'	65'	June Salinity °/oo 0'	65'
1	53.5	49.7	49.2	49.1	29.54	-	65.9	51.6	51.2	51.2	30.79	-
2	53.1	50.0	49.3	49.2	29.36	-	67.4	51.9	51.8	51.6	.95	-
3	55.8	49.8	49.1	49.0	27.87	-	67.3	52.2	51.9	51.9	.62	32.77
4	54.8	50.0	49.3	49.3	26.89	-	67.3	51.8	51.7	51.6	.12	-
5	58.0	49.8	49.7	49.7	27.63	-	67.2	55.2	53.7	53.1	.67	-
6	58.1	49.7	49.2	49.2	22.27	32.13	68.1	56.6	54.7	53.7	.27	-
7	51.3	49.5	49.3	49.3	24.74	-	67.3	54.7	53.1	53.1	30.12	-
8	59.7	49.0	48.6	48.6	26.84	-	69.1	53.2	52.7	52.7	29.93	-
9	58.5	51.0	50.0	49.9	28.53	-	69.0	52.9	52.2	52.1	30.25	-
10	58.9	50.8	50.1	50.0	27.34	-	70.4	53.5	52.8	52.7	30.73	32.84
11	59.8	49.7	49.1	49.0	25.24	-	71.8	52.7	52.2	52.1	27.38	-
12	58.6	49.6	49.1	49.0	25.94	-	73.2	53.8	52.1	52.0	25.84	-
13	60.0	49.8	49.1	49.1	27.53	32.69	73.3	55.1	52.2	52.2	26.70	-
14	59.7	48.8	48.6	48.6	26.68	-	-	-	-	-	31.05	-
15	59.6	49.0	48.9	48.9	28.62	-	66.2	65.8	62.1	60.0	.05	-
16	59.2	49.6	49.5	49.5	29.05	-	68.2	66.1	58.2	57.0	.12	-
17	57.9	49.5	49.1	49.1	27.74	-	66.2	66.1	61.7	59.5	31.82	31.96
18	58.2	49.8	49.1	49.1	26.86	-	66.1	64.2	64.1	64.0	32.09	-
19	57.3	49.6	49.3	49.1	28.07	-	65.0	64.8	64.4	64.3	31.86	-
20	58.7	50.1	50.0	50.0	29.33	32.57	66.6	64.7	64.0	63.9	31.96	-
21	60.4	50.2	50.1	50.1	29.04	-	66.1	64.1	63.8	63.8	30.44	-
22	60.7	50.4	50.0	50.0	27.05	-	67.6	62.8	62.1	62.0	30.37	-
23	62.6	51.0	50.9	50.7	23.81	-	68.6	63.6	60.3	60.2	29.26	-
24	64.0	50.5	50.5	50.6	29.57	-	69.3	62.1	58.7	58.2	28.51	32.36
25	63.9	50.0	49.9	49.9	29.96	-	70.5	62.3	58.1	58.0	.72	-
26	64.9	54.8	50.2	50.2	31.00	-	72.1	62.1	58.3	58.2	28.22	-
27	60.2	51.8	50.8	50.8	27.80	32.91	70.8	61.3	58.9	58.9	27.64	-
28	59.9	50.4	50.1	50.0	.59	-	-	-	-	-	28.10	-
29	63.5	50.8	50.8	50.8	.41	-	72.6	61.1	58.8	58.3	30.01	-
30	63.0	51.1	51.0	51.0	27.50	-	75.2	59.9	58.7	58.4	29.25	-
31	64.3	50.8	50.5	50.2	28.47	-						
Mean	59.3	50.2	49.7	49.6	27.75	32.58	68.9	58.8	57.0	56.6	29.86	32.48

Table 15 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1959

	July						August					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	65'	0'	65'	0'	30'	50'	65'	0'	65'
1	76.1	62.6	61.2	60.2	28.25	32.45	80.3	62.0	57.7	57.2	29.23	-
2	77.6	61.2	60.0	59.3	26.40	-	77.8	66.2	59.8	59.8	30.00	-
3	74.1	63.0	62.0	61.8	29.57	-	74.1	69.6	69.0	-	31.05	-
4	75.1	66.0	64.0	63.9	29.92	-	73.8	70.5	69.7	69.2	30.34	-
5	76.1	73.0	65.2	65.0	28.98	-	73.3	69.3	66.1	65.5	29.66	31.95
6	75.8	69.8	64.3	64.3	29.19	-	72.8	67.9	67.2	67.2	31.28	-
7	75.8	65.2	64.2	64.2	30.23	-	73.0	70.2	69.0	68.6	30.97	-
8	76.1	73.1	65.8	65.8	29.88	32.02	73.4	71.2	68.8	68.8	.98	-
9	76.1	72.8	66.6	66.0	29.65	-	74.2	72.1	69.1	68.8	.42	-
10	-	-	-	-	-	-	74.6	70.8	68.2	68.2	.54	-
11	71.7	70.3	62.1	62.1	30.44	-	75.8	71.6	69.1	68.8	.52	-
12	73.0	70.3	62.8	62.2	27.08	-	75.9	70.8	68.2	68.1	.69	31.94
13	73.1	67.1	60.4	60.2	28.86	-	76.9	72.7	69.5	69.2	30.74	-
14	73.2	70.2	61.3	60.2	.03	-	77.8	74.1	69.0	68.5	26.45	-
15	73.5	68.1	60.2	60.1	28.13	31.99	77.0	70.8	68.1	67.9	26.19	-
16	72.8	67.1	61.7	61.0	30.03	-	78.8	70.0	67.4	67.2	28.10	-
17	72.9	65.2	62.8	62.2	30.05	-	79.6	68.0	66.3	66.0	29.14	-
18	74.3	64.6	63.4	63.3	29.43	-	78.3	67.7	67.0	67.0	30.84	-
19	73.7	64.0	62.8	62.8	28.76	-	79.1	66.7	64.2	64.1	30.69	32.34
20	73.9	62.6	61.1	61.0	.52	-	80.2	68.0	62.0	61.5	31.10	-
21	72.0	62.0	59.4	59.4	.73	-	78.3	71.2	62.5	62.2	32.08	-
22	74.7	67.9	58.3	58.1	.35	32.52	78.1	66.2	65.2	65.1	31.37	-
23	71.9	62.6	58.9	58.0	.61	-	80.4	69.0	61.7	61.4	.88	-
24	73.9	63.1	58.6	57.9	28.01	-	79.8	68.7	65.5	64.7	.84	-
25	73.4	64.1	60.4	58.2	29.14	-	79.4	73.0	64.0	63.8	31.97	-
26	74.2	63.9	55.3	55.1	28.83	-	79.2	68.0	63.9	63.8	32.05	32.34
27	77.0	63.8	55.7	55.7	27.73	-	79.9	70.2	63.8	63.8	31.13	-
28	76.3	63.0	57.0	56.1	29.56	-	70.0	69.0	63.7	63.7	31.00	-
29	74.2	62.2	56.0	55.9	29.02	32.87	80.3	69.9	63.0	62.9	29.21	-
30	76.9	62.7	56.8	56.1	23.79	-	80.3	70.0	62.4	62.4	27.55	-
31	77.7	62.3	57.3	56.8	28.80	-	80.3	65.0	61.9	61.8	30.16	-
Mean	74.6	65.8	60.9	60.4	28.73	32.37	77.2	69.4	65.6	65.2	30.30	

Table 15 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1959

Depth / Day	September Temperature °F 0'	30'	50'	65'	September Salinity °/oo 0'	65'	October Temperature °F 0'	30'	50'	65'	October Salinity °/oo 0'	65'
1	80.7	64.6	61.9	61.8	-	-	74.7	74.5	-	-	31.44	-
2	80.4	61.9	61.2	61.2	31.22	32.49	73.7	73.8	-	-	.50	-
3	77.8	64.1	62.0	61.8	30.85	-	73.1	-	-	-	.45	-
4	81.2	72.8	61.8	61.7	31.17	-	72.7	72.5	-	-	.36	-
5	79.1	67.0	61.0	60.9	.84	-	73.2	73.2	-	-	31.03	-
6	79.9	70.0	63.9	63.9	.56	-	-	-	-	-	29.88	-
7	79.9	70.0	65.8	65.7	.55	-	73.1	-	-	-	29.88	31.32
8	80.4	69.1	67.6	67.2	.50	-	73.7	-	-	-	30.30	-
9	80.1	72.6	68.9	68.9	.52	32.17	73.0	-	-	-	29.98	-
10	79.9	71.2	68.1	68.0	.46	-	72.6	-	-	-	30.01	-
11	78.1	72.3	68.3	67.8	.61	-	-	-	-	-	29.68	-
12	77.8	77.7	77.5	77.3	.39	-	73.1	-	-	-	30.77	-
13	76.8	76.3	76.2	76.2	.41	-	72.4	-	-	-	30.97	-
14	76.2	75.9	75.8	-	.46	-	-	-	-	-	31.10	31.57
15	75.9	75.9	-	-	.34	-	70.1	-	-	-	.25	-
16	76.2	76.1	75.8	-	.51	31.50	69.4	69.4	-	-	.32	-
17	74.8	74.8	74.7	74.7	.62	-	69.6	-	-	-	.23	-
18	74.4	74.3	74.2	74.2	.66	-	67.8	-	-	-	.23	-
19	73.9	73.8	73.7	73.7	.66	-	69.0	-	-	-	.25	-
20	73.2	73.1	73.0	-	.74	-	68.7	-	-	-	31.35	-
21	73.8	73.6	73.2	-	31.81	-	67.7	-	-	-	30.60	31.18
22	72.7	72.9	-	-	28.32	-	68.1	-	-	-	31.40	-
23	73.1	73.0	73.0	-	29.10	31.61	67.6	-	-	-	.37	-
24	73.7	72.8	72.8	-	30.61	-	-	-	-	-	31.39	-
25	73.4	72.7	72.4	-	.74	-	67.9	68.0	-	-	29.85	-
26	73.7	72.8	-	-	.28	-	66.8	67.3	-	-	30.11	-
27	73.7	72.8	-	-	.68	-	66.8	-	-	-	.74	-
28	74.1	73.0	-	-	30.67	-	65.4	-	-	-	.67	30.72
29	75.0	74.0	-	-	31.22	-	64.5	-	-	-	30.87	-
30	-	-	-	-	31.53	31.51	64.8	-	-	-	31.12	-
31							64.6	-	-	-	31.30	-
Mean	76.5	72.1	-	-	31.14	31.86	69.8	-	-	-	30.85	31.20

Table 15 (cont'd)

CHESAPEAKE LIGHTSHIP 36°58'07"N. 75°42'02"W. Depth of water - 65 feet

1959

	November						December					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth Day	0'	30'	50'	65'	0'	65'	0'	30'	50'	65'	0'	65'
1	64.9	64.9	-	-	-	-	54.6	54.2	54.7	54.7	31.07	-
2	65.0	65.1	-	-	-	-	54.7	54.1	54.5	54.5	31.08	31.33
3	64.2	64.1	-	-	31.71	-	-	-	-	-	-	-
4	63.2	63.3	-	-	29.97	32.00	54.1	54.1	54.1	54.1	32.07	-
5	63.3	63.5	-	-	29.26	-	53.6	53.5	53.5	53.6	.10	-
6	64.0	63.9	-	-	30.14	-	53.6	53.0	53.0	53.1	32.10	-
7	-	-	-	-	30.77	-	52.0	52.0	52.2	52.2	31.36	-
8	62.0	62.0	-	-	31.71	-	50.3	50.9	51.0	51.1	28.31	-
9	61.0	61.0	-	-	31.85	-	48.8	50.9	51.6	51.6	27.50	31.25
10	61.2	61.2	61.1	61.1	32.24	-	50.0	51.8	52.1	52.1	28.19	-
11	61.1	61.0	61.1	61.1	28.18	32.20	50.9	51.5	52.0	52.0	29.09	-
12	61.1	61.0	61.0	61.0	32.20	-	50.7	52.3	52.4	52.4	30.14	-
13	60.8	59.9	59.9	59.8	.19	-	51.6	51.8	52.1	52.1	31.28	-
14	61.1	61.0	61.0	61.0	.17	-	50.8	51.2	51.8	51.8	31.02	-
15	61.1	61.1	61.1	61.1	.17	-	51.0	50.7	51.0	51.1	30.69	-
16	60.2	60.2	60.1	60.1	.09	-	50.3	50.4	50.8	50.9	.49	31.37
17	60.0	60.0	60.0	60.1	.02	-	50.5	51.0	51.0	51.0	30.58	-
18	57.9	57.9	58.0	57.9	.00	31.99	51.0	51.0	51.1	51.1	31.20	-
19	57.8	57.7	57.8	57.8	.07	-	-	-	-	-	-	-
20	57.0	57.1	57.1	57.1	.08	-	50.2	51.2	50.7	50.4	32.47	-
21	57.2	57.1	57.2	57.2	.11	-	50.0	50.0	50.0	50.0	32.52	-
22	-	-	-	-	.16	-	-	-	-	-	-	-
23	60.2	57.9	57.3	57.2	.22	-	48.3	48.6	48.6	48.5	32.54	32.49
24	57.3	57.3	57.3	57.2	32.19	-	47.5	47.5	47.5	47.5	.30	-
25	56.2	56.4	57.5	57.5	31.30	31.84	47.0	46.8	47.0	47.1	.17	-
26	51.5	53.2	53.3	53.3	30.62	-	47.0	47.0	47.0	47.0	.05	-
27	53.0	55.7	55.8	55.8	26.81	-	47.2	47.1	47.0	47.0	.11	-
28	56.2	56.1	56.1	56.1	31.42	-	47.0	47.0	46.8	46.7	32.08	-
29	55.1	55.7	55.7	55.7	.80	-	48.0	47.2	47.1	47.1	31.79	32.10
30	55.1	55.3	55.9	55.9	31.50	-	47.5	47.0	47.0	47.0	-	-
31							47.0	46.5	46.5	46.5	32.10	-
Mean	59.6	59.7	-	-	31.32	32.01	50.2	50.4	50.5	50.5	31.13	31.71

Diamond Shoals Lightship (Figure 16, Table 16)

Because the temperature regime at Diamond Shoals changes so rapidly and so radically, the temperature profile is drawn in five degree isotherms rather than in the one degree isotherms of the other figrues.

From January through April temperature fluctuated around the mean in a manner characteristic of this station and showed a direct relationship between rising and falling values of temperature and salinity. During the summer months temperature was more steady than during previous years and was uniformly above the mean. Equally high salinities during the same period show that Gulf Stream water dominated the area of the shoals during the summer. In the autumn, temperatures and salinities again fluctuated widely as Virginian coastal water at times pushed down over the shoals. The first such marked intrusion began on September 17th and persisted throughout the month. Bumpus (1960) reported that within the period September 19th to October 11th ten drift bottles launched during the spring and summer off southern New England came ashore at points between New Jersey and North Carolina, four of them rounding Cape Hatteras. Prior to this no bottles launched in 1959 off New England had traveled further west or south than Long Island. This excursion of coastal water is associated with a northeasterly wind regime.

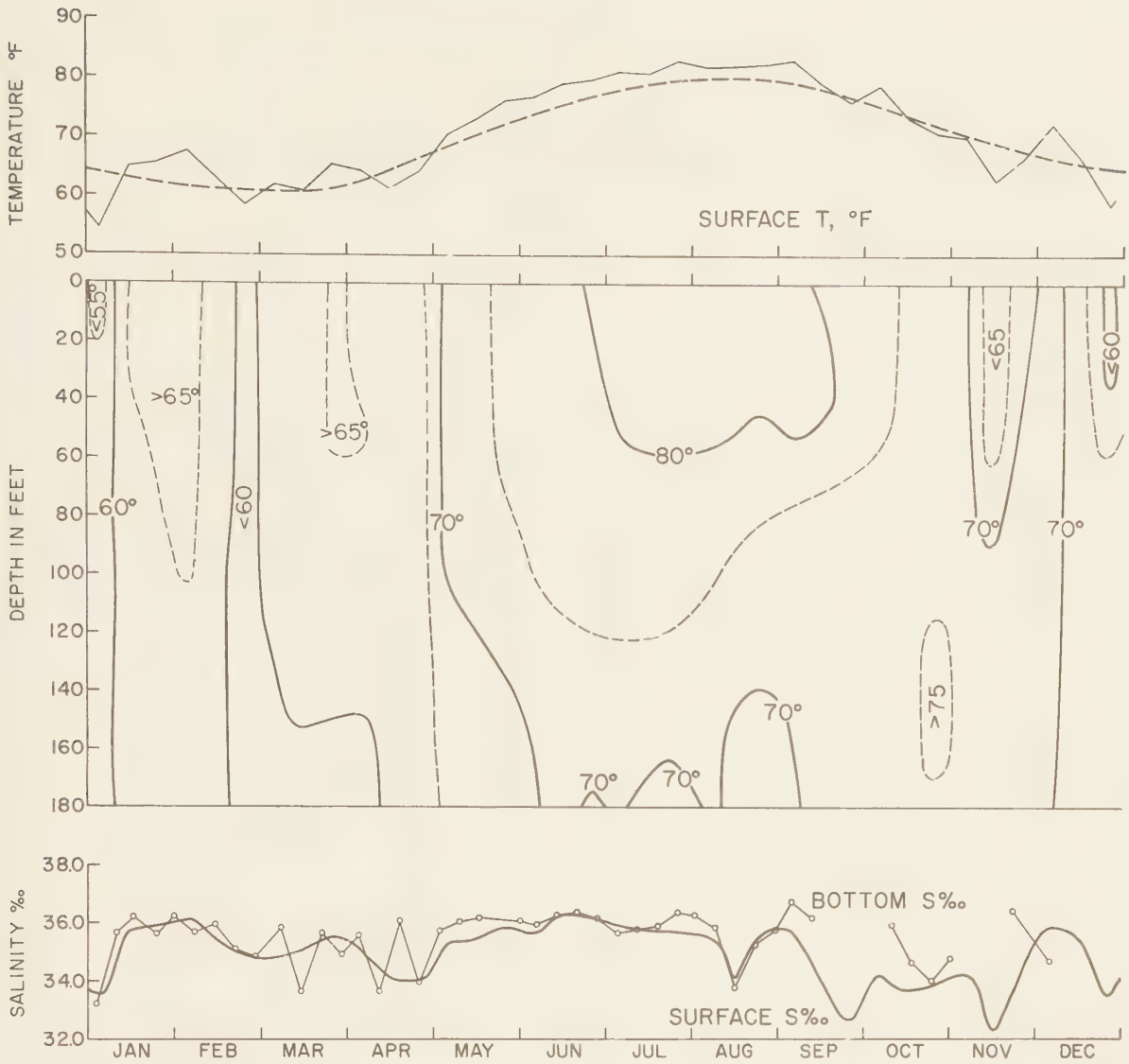

Figure 16. Diamond Shoals Lightship, 1959. (Dashed line in upper diagram, mean for period 1923-1956.)

Table 16

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

January 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	46.8	46.4	46.6	47.3	47.4	47.5	32.68	-
2	44.1	45.2	46.9	47.3	48.1	48.2	31.05	-
3	45.9	45.8	45.8	46.6	47.2	51.6	32.24	33.22
4	45.6	46.4	52.0	48.7	49.3	49.9	31.93	-
5	50.3	50.9	55.1	60.2	62.7	64.5	32.48	-
6	70.1	70.3	70.3	70.2	70.2	69.9	36.32	-
7	54.2	59.5	63.6	66.1	68.2	68.3	33.14	-
8	65.2	66.6	67.7	67.1	65.3	62.4	35.74	-
9	-	-	-	-	-	-	-	-
10	68.3	68.3	68.2	64.6	63.3	63.2	36.18	35.66
11	65.7	65.7	65.1	63.9	63.2	63.1	.09	-
12	56.2	56.8	57.3	60.1	60.0	62.2	36.22	-
13	68.3	65.7	63.0	59.8	62.1	63.2	34.24	-
14	58.0	62.4	63.1	62.6	61.8	60.8	36.20	-
15	66.8	67.1	67.0	66.9	65.9	65.0	34.40	-
16	68.8	68.8	68.2	66.3	64.7	64.5	36.18	36.22
17	67.3	67.2	67.2	65.8	64.2	62.5	.24	-
18	65.0	64.3	63.1	62.1	60.2	58.3	.23	-
19	69.1	69.0	68.6	66.2	67.7	58.7	36.20	-
20	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-
23	56.9	57.1	57.0	56.6	56.2	56.2	35.66	-
24	57.2	58.9	59.0	59.9	58.8	58.3	34.44	35.62
25	66.1	64.8	64.3	63.9	63.2	62.3	36.29	-
26	71.9	71.9	71.5	69.1	67.1	66.9	36.33	-
27	70.1	70.0	69.9	69.0	65.7	63.2	-	-
28	68.7	68.6	68.5	61.0	58.6	56.6	36.30	-
29	61.8	60.0	59.8	59.6	59.8	59.8	35.68	-
30	69.3	69.3	69.3	67.9	62.3	60.8	36.30	-
31	68.3	68.3	68.2	66.9	66.7	65.8	36.28	36.26
Mean	61.7	62.0	62.5	61.7	61.1	60.5	35.04	35.40

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

February 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	68.7	68.8	68.9	67.2	66.8	66.8	36.26	-
2	68.0	67.8	67.8	66.3	65.8	63.5	.04	-
3	70.2	70.1	69.2	64.1	57.1	53.2	36.28	-
4	63.6	63.2	63.1	64.3	61.8	60.3	35.62	-
5	68.2	68.2	68.1	67.4	61.6	59.5	36.20	-
6	68.1	68.1	68.0	67.1	62.8	61.6	.22	-
7	67.1	67.1	66.8	61.8	60.9	60.1	36.22	35.68
8	64.4	64.7	64.9	63.9	61.3	59.8	35.96	-
9	70.9	70.9	70.5	66.8	64.4	63.2	36.30	-
10	67.9	67.9	67.8	67.2	66.7	66.2	36.29	-
11	62.0	62.6	65.0	63.8	63.4	63.8	35.26	-
12	65.6	64.8	64.1	62.1	61.8	61.9	36.02	-
13	-	-	-	-	-	-	-	-
14	70.8	70.4	70.1	67.7	64.6	64.0	36.22	35.96
15	-	-	-	-	-	-	-	-
16	66.4	66.8	66.8	66.8	66.4	65.2	36.11	-
17	51.3	52.3	52.9	53.9	54.2	54.4	33.53	-
18	72.7	72.1	64.4	53.8	60.3	62.3	36.18	-
19	69.2	68.2	-	-	-	-	36.99	-
20	47.6	48.6	52.3	53.6	54.1	56.4	32.98	-
21	52.2	52.3	52.8	58.0	58.4	60.2	33.62	35.09
22	66.8	65.8	64.9	62.8	61.9	61.1	35.97	-
23	-	-	-	-	-	-	-	-
24	61.8	61.9	61.9	62.4	61.0	56.5	35.75	-
25	66.3	66.3	65.8	65.1	63.4	62.0	36.24	-
26	56.9	56.7	57.1	57.6	57.3	56.6	34.75	-
27	52.7	52.9	53.6	53.9	55.3	56.4	34.02	-
28	53.2	53.1	53.2	54.1	55.7	56.5	33.89	34.83
Mean	63.7	63.7	63.3	62.2	61.1	60.5	35.56	35.39

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

March 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	75.2	75.8	75.8	69.9	60.8	60.2	36.16	-
2	-	-	-	-	-	-	-	-
3	59.6	58.9	53.4	52.2	51.2	52.2	34.52	-
4	48.4	50.7	54.8	55.3	60.8	57.4	31.84	-
5	51.0	50.9	51.8	56.6	56.5	56.6	32.60	-
6	-	-	-	-	-	-	-	-
7	66.9	66.9	66.9	65.0	62.4	58.8	36.09	35.84
8	62.3	62.3	62.4	63.1	60.1	58.5	35.06	-
9	67.0	67.0	67.0	67.0	60.0	57.8	36.14	-
10	65.4	65.4	65.5	65.2	65.1	62.5	36.04	-
11	56.0	56.0	56.1	58.0	58.8	59.1	33.77	-
12	55.6	55.6	55.9	57.5	59.4	60.1	34.37	-
13	56.1	56.1	58.1	64.8	64.2	62.2	33.85	-
14	58.3	58.3	59.3	63.7	62.9	61.8	33.68	33.62
15	63.8	63.9	64.1	64.7	60.0	55.6	35.68	-
16	61.7	61.7	61.7	62.3	60.9	56.0	.34	-
17	64.9	63.5	61.7	60.3	58.4	58.0	.97	-
18	60.7	60.6	60.4	60.1	60.0	59.7	35.24	-
19	64.2	61.8	61.2	61.1	61.1	61.1	36.04	-
20	69.0	68.0	66.9	65.0	62.5	61.6	.12	-
21	68.6	67.8	66.9	64.0	60.6	59.3	36.07	35.63
22	-	-	-	-	-	-	-	-
23	58.1	58.0	58.0	58.1	59.1	59.0	34.81	-
24	58.8	60.0	58.9	59.3	59.0	58.5	34.64	-
25	73.1	73.0	72.9	67.7	63.4	63.0	36.09	-
26	67.1	67.1	67.0	65.1	64.1	63.7	36.12	-
27	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	34.87	34.90
29	73.2	73.2	72.5	58.8	56.3	54.3	36.19	-
30	-	-	-	-	-	-	-	-
31	60.2	60.7	61.5	65.8	57.8	57.3	-	-
Mean	62.6	62.5	62.4	62.0	60.2	59.0	35.09	35.00

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

April 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	70.1	69.4	68.8	64.0	58.8	58.8	36.17	-
2	-	-	-	-	-	-	-	-
3	56.2	56.5	58.9	62.0	59.3	57.9	33.67	-
4	61.5	61.8	64.5	66.5	57.9	57.7	34.70	35.56
5	58.7	59.7	63.0	65.5	57.8	57.6	33.60	-
6	67.3	67.2	67.2	60.0	57.5	57.7	36.08	-
7	67.3	67.0	66.0	63.3	56.6	56.2	.18	-
8	68.8	67.7	66.1	61.3	57.9	56.3	.16	-
9	66.5	66.3	66.1	58.4	56.6	56.1	36.00	-
10	64.4	64.8	65.0	57.8	56.3	56.0	32.85	-
11	63.3	64.0	64.0	63.5	59.7	57.2	-	33.60
12	-	-	-	-	-	-	-	-
13	59.5	59.4	59.4	59.5	60.0	61.0	34.62	-
14	65.0	62.8	61.8	61.6	61.1	61.1	34.33	-
15	53.5	54.2	62.2	62.0	60.0	59.9	32.98	-
16	-	68.0	59.7	56.4	60.0	60.2	34.02	-
17	62.0	70.4	70.3	67.3	65.0	64.9	34.73	-
18	62.0	68.7	69.0	64.3	64.1	63.9	33.83	36.04
19	63.2	62.0	60.0	61.5	64.9	63.7	34.40	-
20	63.0	62.2	61.7	64.7	65.0	65.0	33.80	-
21	74.3	74.6	74.3	63.9	62.1	61.2	36.28	-
22	72.0	68.0	65.8	59.4	59.8	59.9	36.00	-
23	52.6	52.4	52.4	54.0	59.5	59.0	32.48	-
24	54.5	52.3	53.2	60.8	58.7	59.9	32.32	-
25	55.8	54.1	53.8	55.7	60.2	60.2	31.50	33.97
26	73.9	72.6	71.7	70.5	70.1	70.1	36.25	-
27	-	-	-	-	-	-	-	-
28	65.0	65.0	65.0	67.6	67.0	65.6	34.05	-
29	63.2	63.7	64.6	69.1	68.4	68.2	33.18	-
30	67.0	-	68.7	69.0	67.3	66.9	33.69	-
Mean	63.5	63.6	63.8	62.6	61.2	60.8	34.38	34.79

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

May 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	59.8	64.5	67.2	69.6	66.0	64.2	36.16	-
2	71.7	70.7	71.5	70.2	67.2	65.1	-	35.74
3	68.4	73.0	71.8	69.5	65.5	63.6	34.49	-
4	69.7	68.1	68.1	69.2	68.1	67.2	34.68	-
5	70.9	70.9	70.2	67.5	67.8	66.8	35.28	-
6	75.9	75.8	75.7	72.8	68.9	65.9	-	-
7	74.9	74.7	74.3	70.4	67.4	65.8	36.27	-
8	70.1	70.9	73.9	74.8	65.2	64.8	34.38	-
9	73.0	73.0	73.1	70.3	67.8	66.2	35.95	36.08
10	73.8	73.7	73.5	70.4	66.2	65.3	-	-
11	74.3	74.0	73.8	72.7	66.9	65.9	-	-
12	71.4	73.1	73.7	69.4	69.0	67.0	35.14	-
13	72.7	74.6	74.7	71.2	63.9	62.1	34.79	-
14	71.1	71.0	72.8	71.2	67.5	60.3	34.58	-
15	73.8	73.8	73.8	72.7	70.4	70.2	-	-
16	72.6	71.9	71.8	70.2	69.1	69.1	35.54	36.19
17	70.9	70.9	70.8	71.8	71.8	71.8	35.58	-
18	77.5	76.0	73.2	70.4	69.9	69.9	36.38	-
19	75.0	74.3	72.4	71.1	72.0	71.2	-	-
20	75.4	75.1	74.5	69.0	66.6	66.1	36.19	-
21	74.8	74.2	74.1	73.8	67.2	66.1	35.35	-
22	77.1	75.5	76.8	74.1	68.0	67.9	35.45	-
23	77.1	77.1	77.0	73.7	65.0	64.2	36.28	-
24	75.0	75.0	75.0	75.0	65.8	63.6	36.11	-
25	75.1	75.1	75.1	74.2	73.9	71.0	35.56	-
26	76.8	76.9	77.0	75.2	71.3	71.1	.37	-
27	77.9	76.9	77.4	73.5	68.2	66.2	35.88	-
28	77.4	76.7	75.5	67.8	65.2	64.2	36.07	-
29	77.3	76.2	76.2	70.4	63.1	62.8	35.90	-
30	75.9	75.6	75.4	75.2	70.1	63.9	35.89	36.08
31	79.4	79.0	77.6	74.0	69.2	66.5	36.29	-
Mean	73.8	73.8	73.8	71.7	67.9	66.3	35.60	36.02

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

June 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	74.9	75.9	75.9	74.4	70.7	69.2	34.94	-
2	74.9	74.8	74.7	73.8	71.5	68.6	35.45	-
3	76.8	76.8	78.0	75.3	68.6	68.0	.38	-
4	76.1	76.1	76.1	74.1	68.3	66.2	.58	-
5	76.0	75.9	75.5	73.4	72.4	67.3	.68	-
6	77.0	76.8	76.9	77.0	71.4	70.5	.75	35.96
7	79.1	78.3	78.0	75.8	73.7	72.9	.70	-
8	79.2	77.8	77.1	74.8	71.4	68.0	.83	-
9	79.6	78.2	77.9	76.1	73.6	67.5	.87	-
10	78.2	77.7	77.6	77.2	72.0	71.8	35.94	-
11	80.9	79.8	79.5	76.5	74.7	73.7	36.38	-
12	80.2	79.7	78.0	77.1	73.0	72.8	.23	-
13	79.8	79.1	78.5	75.8	72.5	70.0	36.12	36.26
14	76.7	76.7	76.7	75.8	74.8	74.7	35.82	-
15	78.9	78.9	78.9	77.7	77.3	77.2	36.23	-
16	80.3	78.8	78.2	77.3	74.4	73.8	.40	-
17	78.8	78.8	78.7	77.4	77.1	77.0	.40	-
18	79.2	79.2	79.1	77.9	77.3	77.3	.40	-
19	79.1	79.1	79.0	77.9	72.2	77.1	.41	-
20	80.7	79.8	79.1	77.1	74.1	73.8	.35	36.36
21	78.0	77.9	77.2	76.6	76.2	76.1	.33	-
22	80.3	79.7	79.2	76.2	75.7	73.9	.34	-
23	79.9	79.7	79.2	77.3	70.0	69.9	.32	-
24	80.1	79.8	78.9	75.6	68.1	66.5	36.26	-
25	80.3	79.6	78.2	74.6	68.5	66.3	-	-
26	81.1	80.8	80.8	77.6	77.0	69.7	36.29	-
27	78.9	78.3	78.1	78.6	73.5	68.7	35.70	36.16
28	80.2	80.8	80.1	77.2	70.9	70.2	35.87	-
29	81.9	80.4	80.0	76.8	71.3	68.2	36.26	-
30	80.3	78.8	78.1	76.3	71.4	67.9	-	-
Mean	78.9	78.5	71.8	76.3	73.1	71.2	36.01	36.18

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

July 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	84.2	82.3	81.4	77.7	71.3	69.5	36.16	-
2	82.7	82.8	81.8	74.3	68.6	66.3	35.79	-
3	81.2	81.2	81.1	76.0	67.8	66.6	.82	-
4	79.7	79.1	78.2	77.1	75.8	73.0	35.65	35.64
5	81.0	81.0	81.0	80.7	70.9	68.8	36.22	-
6	80.1	80.1	80.0	79.7	70.8	68.0	36.22	-
7	80.8	81.1	81.1	80.0	75.3	73.8	35.28	-
8	83.0	81.3	80.8	79.2	76.0	75.2	35.86	-
9	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-
11	79.9	79.9	79.1	79.0	73.1	69.7	35.77	35.78
12	79.9	79.9	80.0	78.3	68.7	67.8	.69	-
13	80.3	80.2	80.2	80.0	67.5	67.3	.85	-
14	80.7	80.5	80.7	79.6	74.3	66.5	.70	-
15	81.1	81.0	81.1	81.0	77.1	71.4	.58	-
16	80.6	80.2	80.0	80.0	74.1	69.2	.71	-
17	79.1	78.0	77.9	77.6	73.2	71.5	.63	-
18	84.1	84.0	82.8	80.8	76.3	75.2	.90	35.89
19	83.1	83.1	81.8	-	-	-	.77	-
20	81.9	81.9	81.9	72.7	67.9	67.3	.90	-
21	80.2	79.7	-	67.9	63.1	62.2	.92	-
22	82.7	80.7	79.5	76.2	67.9	63.3	.42	-
23	83.8	82.0	80.6	77.8	72.5	63.5	.54	-
24	83.5	81.9	81.2	77.5	74.8	73.7	.66	-
25	84.1	84.2	83.3	78.5	72.7	71.0	.55	36.37
26	84.7	83.2	81.3	80.1	68.8	66.0	.77	-
27	84.1	83.1	81.9	72.0	68.0	67.0	.65	-
28	82.3	81.2	81.0	73.0	68.0	66.5	.70	-
29	83.1	83.1	82.9	80.2	73.0	67.5	.74	-
30	84.7	84.5	83.7	79.0	74.5	67.2	.54	-
31	84.1	84.0	83.8	80.2	75.7	68.5	35.69	-
Mean	82.1	81.6	81.0	77.7	71.7	68.7	35.75	35.92

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

August 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	84.2	84.0	83.2	76.1	69.9	68.7	35.92	36.26
2	82.2	82.2	81.9	74.8	68.5	67.4	35.91	-
3	82.1	81.3	80.8	80.2	80.0	-	36.07	-
4	83.0	82.4	82.0	79.9	76.1	73.8	35.89	-
5	81.1	81.0	80.8	79.8	79.0	76.2	.95	-
6	82.9	82.9	82.1	80.5	79.8	76.2	.86	-
7	83.5	83.1	83.5	81.2	77.9	75.0	.94	-
8	82.7	82.7	82.3	75.0	72.3	71.3	35.90	35.88
9	80.3	79.9	80.3	75.2	71.6	70.0	34.34	-
10	79.7	81.8	81.3	78.7	71.5	69.3	33.61	-
11	80.1	76.1	75.4	78.2	72.4	69.3	32.17	-
12	83.2	82.2	82.8	77.5	69.5	68.2	35.56	-
13	82.8	82.4	82.6	76.9	69.2	68.0	35.54	-
14	82.3	82.4	80.9	72.1	69.0	66.9	33.49	-
15	81.1	82.0	81.1	71.6	68.5	65.9	33.49	33.76
16	82.9	82.9	82.5	68.3	66.5	66.0	32.83	-
17	82.2	82.9	82.7	68.0	66.6	65.0	32.82	-
18	83.1	83.1	83.0	76.1	64.9	64.0	34.39	-
19	-	-	-	-	-	-	34.40	-
20	83.0	83.0	75.0	67.6	63.1	62.3	35.75	-
21	83.1	82.6	76.0	68.1	-	-	.76	-
22	82.6	82.7	76.0	68.4	63.1	62.2	.76	35.24
23	81.0	76.4	74.4	72.7	68.4	67.2	.79	-
24	80.6	75.5	74.6	72.9	68.6	-	.80	-
25	83.2	80.5	78.2	-	-	-	.56	-
26	84.0	81.8	80.7	77.0	74.2	-	.14	-
27	-	-	-	-	-	-	.15	-
28	83.6	82.9	81.6	-	-	66.0	.74	-
29	83.1	82.7	80.5	71.5	68.5	68.2	.81	35.74
30	83.1	82.8	80.7	71.3	66.7	66.0	.73	-
31	83.0	82.5	80.0	80.9	67.0	65.5	35.75	-
Mean	82.4	81.7	80.2	74.8	70.5	68.3	35.09	35.38

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Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

September 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	83.7	83.1	80.8	72.4	68.0	65.5	-	-
2	80.3	75.9	72.8	67.2	65.9	65.9	35.83	-
3	83.4	83.1	81.8	76.5	67.3	66.8	.55	-
4	84.8	84.1	83.4	-	-	66.2	.64	-
5	84.9	83.9	82.4	73.0	67.1	-	.66	36.73
6	84.7	83.5	79.4	71.9	-	-	.84	-
7	84.4	83.9	81.9	75.0	-	-	.84	-
8	82.5	82.6	82.5	79.9	-	-	.65	-
9	82.8	83.7	83.5	-	-	-	35.65	-
10	83.1	83.8	83.8	-	-	-	36.18	-
11	83.3	83.3	81.0	69.0	-	-	35.58	-
12	80.2	79.0	78.9	-	-	-	34.19	36.16
13	77.2	77.8	79.1	-	-	-	32.62	-
14	83.1	82.9	82.8	78.9	-	-	35.63	-
15	82.4	82.5	82.4	73.1	-	-	.79	-
16	80.0	80.6	-	-	62.0	-	35.76	-
17	75.1	75.9	75.1	-	-	-	32.32	-
18	74.1	-	-	-	-	-	32.32	-
19	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	32.10	-
21	75.9	75.9	75.8	67.7	-	-	.09	-
22	75.2	79.0	82.8	-	-	-	32.15	-
23	75.9	-	-	-	-	-	33.67	-
24	76.0	-	-	-	-	-	33.67	-
25	76.2	-	-	-	-	-	31.74	-
26	77.8	-	-	-	-	-	-	-
27	78.1	-	-	-	-	-	32.51	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	32.51	-
Mean	80.2	-	-	-	-	-	34.26	-

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

October 1959

Day	Temperature °F						Salinity °/oo	
Depth	0'	30'	50'	100'	150'	180'	0'	180'
1	78.9	78.0	77.7	-	-	-	36.16	-
2	78.9	78.8	78.2	-	-	-	.23	-
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-
5	81.8	80.2	-	-	-	-	36.10	-
6	-	-	-	-	-	-	32.49	-
7	78.7	81.1	79.9	-	-	-	33.22	-
8	77.7	77.9	-	-	-	-	32.60	-
9	78.1	79.1	79.9	-	-	-	33.15	-
10	79.1	80.5	79.9	-	-	-	33.45	35.93
11	77.3	77.9	-	-	-	-	33.51	-
12	77.8	78.2	78.8	-	-	-	35.70	-
13	81.3	-	-	-	-	-	36.09	-
14	78.8	79.1	-	-	-	-	35.51	-
15	70.8	70.8	70.8	72.5	75.2	78.8	32.68	-
16	69.5	69.9	69.9	71.4	74.3	77.6	.68	-
17	70.6	70.7	70.9	72.4	75.1	78.6	.67	34.67
18	70.4	70.5	70.6	72.4	74.9	78.8	.66	-
19	70.6	70.6	70.7	71.4	74.9	78.7	.66	-
20	67.9	67.9	67.9	69.5	72.1	75.8	32.67	-
21	73.9	73.9	74.0	75.8	76.3	76.7	34.26	-
22	73.9	73.9	74.2	76.1	76.8	77.0	.27	-
23	72.8	75.2	78.2	76.4	75.6	70.6	.02	-
24	71.7	74.2	77.6	76.0	75.0	70.6	.02	34.00
25	71.6	73.1	76.8	76.8	75.2	71.1	34.00	-
26	72.3	73.2	77.0	76.9	75.4	71.6	33.99	-
27	69.5	69.3	69.0	73.1	74.9	75.1	.58	-
28	69.0	69.2	69.6	73.0	74.8	74.9	.58	-
29	69.1	69.2	69.9	72.8	74.9	74.9	.59	-
30	69.1	69.2	69.8	72.7	74.8	74.9	.59	-
31	68.9	69.0	69.7	72.9	74.7	75.0	33.58	34.76
Mean	73.9	74.1	74.0	-	-	-	33.89	34.84

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

November 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	69.5	69.5	70.4	72.9	73.8	73.3	33.68	-
2	69.2	69.3	70.3	72.7	73.6	73.3	.68	-
3	68.9	68.9	69.1	69.9	71.2	-	33.56	-
4	75.8	75.9	75.9	74.6	73.9	72.0	36.10	-
5	70.7	70.7	71.2	73.4	72.8	72.1	35.03	-
6	79.9	79.9	79.8	75.7	72.2	72.2	36.33	-
7	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-
9	64.9	65.0	65.1	65.8	67.3	68.0	32.75	-
10	63.6	63.8	63.8	64.1	65.1	65.8	32.64	-
11	65.3	65.1	65.1	73.3	69.1	70.2	33.18	-
12	64.2	64.1	65.0	72.0	75.0	75.2	32.43	-
13	61.9	61.9	62.0	68.8	75.1	75.8	31.94	-
14	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-
17	61.9	62.0	62.2	69.0	75.1	-	31.94	-
18	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-
20	60.8	60.8	61.8	74.5	74.9	74.3	31.93	-
21	-	-	-	-	-	-	33.30	-
22	65.4	69.5	72.9	74.1	74.1	74.1	33.32	36.44
23	65.4	69.8	73.0	74.1	74.0	74.1	-	-
24	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-
26	66.1	66.8	68.8	71.9	-	-	34.35	-
27	68.1	68.1	68.6	70.0	70.6	70.7	35.27	-
28	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-
30	69.1	69.7	69.7	69.2	66.1	66.0	35.53	-
Mean	67.3	67.8	68.6	71.4	72.0	-	-	-

Table 16 (cont'd)

DIAMOND SHOALS LIGHTSHIP 35°05'30"N. 75°19'30"W. Depth of water - 200 feet

December 1959

Depth / Day	Temperature °F						Salinity °/oo	
	0'	30'	50'	100'	150'	180'	0'	180'
1	73.1	73.1	73.2	74.1	71.6	68.9	36.08	-
2	73.6	73.7	73.4	72.9	72.8	72.8	36.34	-
3	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	33.85	-
5	74.1	74.1	74.0	73.5	71.4	67.6	36.11	34.67
6	75.2	75.2	75.1	74.7	72.6	73.0	36.32	-
7	-	-	-	-	-	-	-	-
8	71.8	71.7	71.7	71.7	71.7	71.0	36.20	-
9	69.8	69.7	69.8	70.0	69.7	69.1	.09	-
10	69.9	69.9	70.2	70.0	69.8	69.0	36.09	-
11	64.0	64.0	64.0	64.1	64.2	64.5	35.10	-
12	-	-	-	-	-	-	-	-
13	64.1	64.0	64.1	64.2	64.5	64.7	35.10	-
14	64.0	64.0	64.1	64.3	64.3	64.8	35.10	-
15	72.0	72.5	71.9	69.1	66.2	66.6	36.36	-
16	68.8	69.8	69.9	68.8	67.0	66.9	.07	-
17	69.0	69.5	70.0	69.9	68.1	66.9	.09	-
18	71.8	71.9	71.7	69.6	66.3	66.1	36.26	-
19	-	-	-	-	-	-	-	-
20	60.2	60.4	60.5	64.4	65.0	65.0	34.18	-
21	60.0	60.0	60.2	64.1	65.0	64.8	34.17	-
22	52.0	54.0	54.1	54.1	55.3	58.5	32.68	-
23	53.1	53.1	53.2	56.0	63.6	64.0	.48	-
24	52.9	53.8	63.3	69.9	71.9	72.1	32.00	-
25	53.0	54.0	69.3	69.8	71.8	72.2	31.99	-
26	52.8	53.6	68.4	69.3	71.7	71.8	-	36.28
27	72.9	72.9	72.9	72.7	72.5	72.4	36.42	-
28	73.0	72.9	73.0	72.9	72.6	72.3	36.42	-
29	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	32.02	-
31	56.5	57.4	61.5	69.0	69.0	69.4	32.47	-
Mean	65.3	65.6	67.5	68.3	68.3	68.1	34.88	-

Frying Pan Shoals Lightship (Figure 17, Table 17)

Surface temperatures during January, February and March match air temperature anomalies where January and March were below and February above normal. During these months salinities were quite uniform and somewhat above the readings for the previous three years. Mid-April saw a change in water, surface to bottom, which was indicated by both temperature and salinity. From May onward temperatures were above the mean until early December.

During the past four years surface salinities at this station have tended to lie between 35.5 and 36.5°/$_{oo}$. Departures from this, in the form of lowered values, occur when coastal water from the north is forced past Cape Hatteras, as in the spring of 1958, or when excessive rainfall augments local runoff. Since there is little storage through freezing over the adjacent inland watershed, surface salinities reflect precipitation with only a slight lag, and depressed values can appear at any season. Minimum salinities have occurred as early as April in 1958 and as late as November in 1956. The minimum for 1959 was found in early August as a result of heavy rainfall in July.

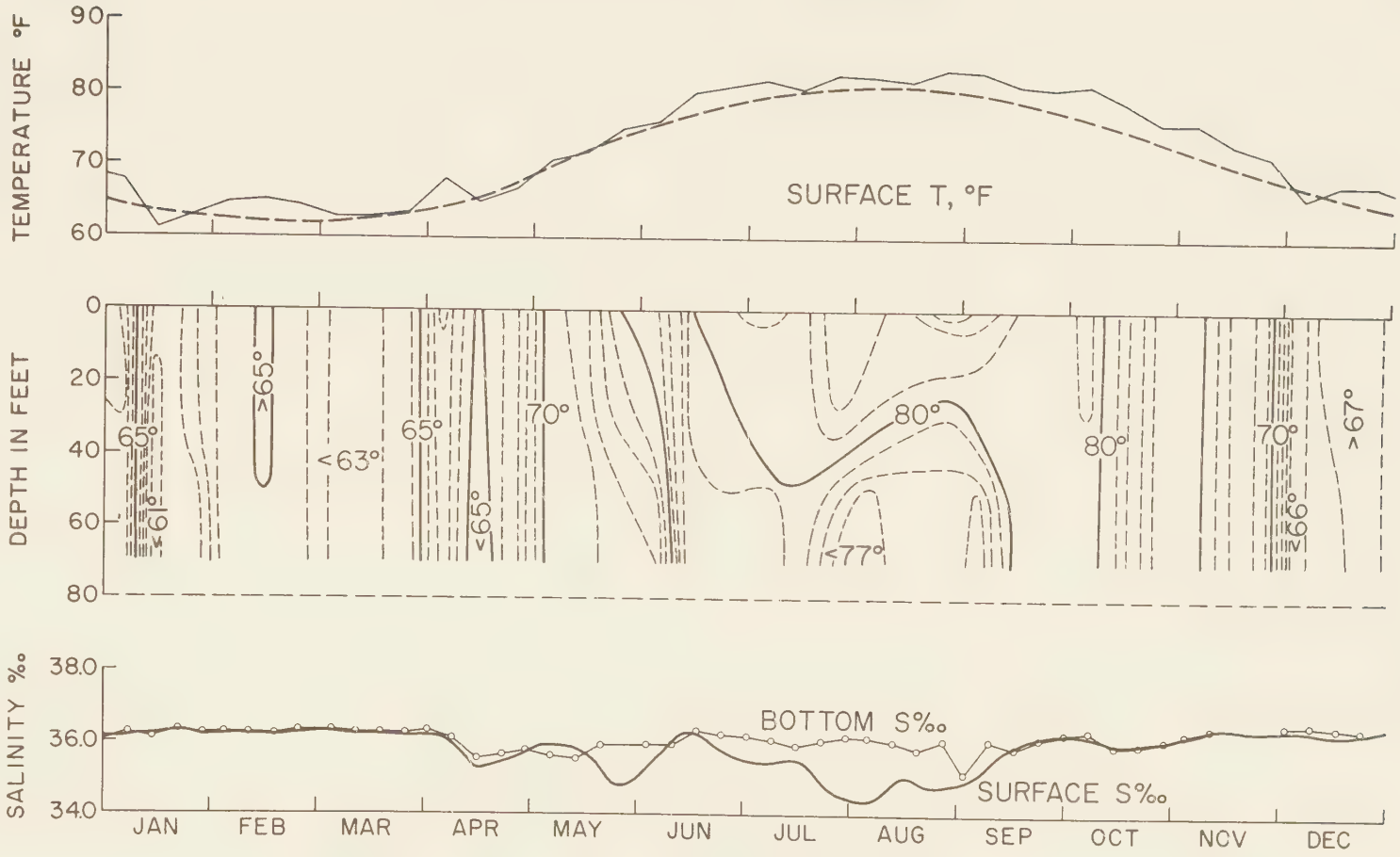

Figure 17. Frying Pan Shoals Lightship, 1959. (Dashed line in upper diagram, mean for period 1947-1956.)

Table 18

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1959

	January					February				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	54.0	53.8	53.8	35.11	-	52.2	52.3	52.3	35.14	-
2	-	-	-	.09	-	-	-	-	.01	-
3	54.7	54.6	54.5	.23	35.24	51.2	51.2	51.1	.43	-
4	54.7	54.4	54.3	35.08	-	51.3	51.1	51.2	35.04	-
5	53.0	53.3	53.3	34.94	-	51.8	51.8	51.9	34.38	-
6	52.8	52.2	52.2	35.15	-	51.4	52.1	52.2	33.82	-
7	53.0	53.0	53.0	34.97	-	-	-	-	34.85	34.86
8	52.3	52.2	52.2	34.65	-	51.8	51.8	51.7	.78	-
9	53.0	53.0	53.0	35.16	-	52.7	52.2	52.2	.72	-
10	53.2	53.2	53.0	.06	35.06	53.1	52.7	52.6	34.83	-
11	52.1	52.1	52.1	.11	-	54.1	53.1	53.1	33.21	-
12	52.7	52.1	52.1	35.21	-	53.3	53.1	53.1	34.88	-
13	50.9	52.1	52.1	33.83	-	53.7	52.9	52.9	35.20	-
14	51.0	52.0	52.0	.41	-	56.6	53.7	53.6	30.18	35.10
15	51.0	52.3	52.2	33.22	-	-	-	-	33.60	-
16	51.7	51.7	51.7	33.86	34.59	55.6	53.8	53.9	33.70	-
17	-	-	-	.23	-	54.9	54.0	54.0	34.14	-
18	48.8	49.0	49.0	34.06	-	55.6	54.1	54.1	33.99	-
19	48.0	49.2	49.0	33.51	-	55.2	54.9	54.9	34.59	-
20	49.0	49.3	49.4	32.53	-	55.8	55.8	55.8	35.06	-
21	49.0	49.2	49.2	33.42	-	55.7	55.5	55.5	34.84	34.90
22	50.0	50.0	50.0	34.23	-	55.1	55.2	55.3	.34	-
23	50.1	50.2	50.5	.41	-	55.6	55.5	55.1	34.80	-
24	49.0	49.1	49.1	.12	34.49	55.6	55.1	55.1	33.69	-
25	49.0	49.0	49.0	.39	-	55.2	55.1	55.1	34.35	-
26	50.0	50.0	50.0	.35	-	56.1	56.2	56.4	34.97	-
27	50.2	50.5	50.6	.14	-	57.1	57.2	57.1	35.30	-
28	51.2	51.0	-	.58	-	56.4	56.6	56.7	35.08	35.04
29	51.2	51.4	51.5	34.59	-					
30	52.5	52.1	52.1	35.10	-					
31	52.0	52.0	52.0	35.14	35.15					
Mean	51.4	51.5	51.5	34.42	34.91	54.3	53.9	53.9	34.43	34.98

Table 18 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1959

	March					April				
	Temperature °F			Salinity °/₀₀		Temperature °F			Salinity °/₀₀	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	55.5	55.9	55.9	34.21	-	58.3	58.0	58.0	32.61	-
2	55.5	55.6	55.6	34.52	-	59.1	59.0	59.0	32.70	-
3	55.0	55.9	56.0	33.69	-	60.6	59.1	59.0	30.55	32.78
4	55.5	55.7	55.8	33.87	-	59.9	59.1	59.1	.54	-
5	55.8	55.8	55.8	34.11	-	60.6	59.4	58.8	.34	-
6	56.1	56.0	55.8	33.62	-	61.9	59.9	59.9	.15	-
7	55.7	56.0	56.1	31.69	33.07	62.6	60.1	60.1	.38	-
8	56.0	56.0	56.0	31.20	-	64.2	60.6	60.2	.55	-
9	57.0	56.0	56.0	-	-	65.9	60.7	60.7	.37	-
10	57.0	56.5	56.3	32.35	-	65.8	61.0	60.9	30.49	32.18
11	57.8	56.4	56.5	31.06	-	68.9	61.6	61.1	29.76	-
12	56.2	56.2	56.2	33.25	-	68.5	61.1	61.1	29.80	-
13	56.4	56.3	56.3	30.97	-	63.0	63.0	61.1	31.11	-
14	57.2	56.8	56.8	30.93	33.81	59.8	60.2	60.2	32.86	-
15	57.0	56.9	56.9	-	-	60.1	60.1	60.1	33.55	-
16	56.7	57.1	57.0	32.07	-	62.8	60.7	60.3	30.93	-
17	56.3	55.6	56.2	32.48	-	63.0	60.9	60.8	.44	33.36
18	56.1	56.2	56.2	33.12	-	63.6	60.9	60.9	.41	-
19	55.9	55.9	55.9	.28	-	64.3	63.0	60.9	30.33	-
20	56.0	55.5	55.5	33.33	-	65.2	62.2	62.1	29.99	-
21	58.5	56.8	56.6	32.37	33.06	66.4	63.1	63.1	29.79	-
22	57.6	56.8	56.8	.37	-	64.9	63.1	63.1	31.27	-
23	56.7	56.7	56.5	32.86	-	63.3	63.2	63.0	32.11	-
24	58.0	58.0	58.0	33.68	-	62.9	62.7	62.7	.74	32.94
25	59.5	57.9	57.9	32.77	-	64.0	63.4	63.3	32.13	-
26	59.1	58.0	58.0	31.56	-	64.9	64.0	63.8	31.36	-
27	59.4	59.1	59.1	32.46	-	64.9	64.9	64.8	31.75	-
28	59.0	59.0	59.0	.63	32.66	66.0	65.9	65.7	30.88	-
29	58.3	58.3	58.3	32.94	-	66.9	66.1	66.0	.72	-
30	59.0	58.6	58.5	33.13	-	67.5	66.3	65.7	30.62	-
31	59.8	59.1	59.0	33.19	-					
Mean	57.1	56.8	56.8	32.75	33.15	63.7	61.8	61.5	31.04	32.82

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Table 17 (cont'd)

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 72 feet

1959

	May						June					
	Temperature °F				Salinity °/oo		Temperature °F				Salinity °/oo	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	69.9	69.7	69.1	69.1	36.09	-	75.5	73.4	71.3	71.1	34.88	-
2	69.4	69.1	69.9	70.0	35.57	-	75.9	72.8	71.7	71.7	34.94	-
3	70.0	68.9	68.8	68.8	.77	-	74.1	73.2	71.9	71.5	35.12	35.94
4	70.1	70.0	70.0	70.0	.98	-	74.2	74.0	72.2	72.1	.48	-
5	70.8	70.6	70.4	70.2	.92	-	75.1	73.2	72.0	72.0	.50	-
6	70.7	69.6	69.1	68.8	35.87	35.64	75.8	74.0	72.8	72.7	.62	-
7	71.1	71.1	71.1	71.1	36.09	-	76.1	75.9	73.2	72.9	.84	-
8	71.8	71.7	71.7	71.8	36.03	-	76.8	75.8	72.1	71.8	.88	-
9	71.4	71.4	71.3	71.2	35.81	-	77.9	76.9	73.9	71.4	35.98	-
10	72.1	72.1	72.0	72.0	36.23	-	78.3	78.0	74.4	72.1	36.00	35.97
11	71.5	71.4	71.3	71.3	.22	-	78.1	76.1	74.1	74.1	35.94	-
12	72.7	70.8	70.7	70.7	.00	-	78.9	78.8	74.9	74.4	36.13	-
13	70.6	69.3	68.5	68.5	36.21	35.52	79.9	78.0	74.2	74.1	.29	-
14	70.5	70.1	69.1	69.1	35.83	-	79.4	79.3	79.2	79.2	.29	-
15	70.9	70.8	70.2	70.0	35.71	-	81.1	80.9	80.9	80.9	.44	-
16	72.1	72.1	71.4	71.2	36.06	-	80.3	80.4	80.4	80.5	.42	-
17	-	-	-	-	36.11	-	80.0	79.8	79.8	79.8	.36	36.32
18	71.8	71.5	71.6	71.6	35.42	-	81.0	80.8	80.8	80.8	.41	-
19	72.9	70.9	70.9	70.9	34.83	-	80.8	80.5	80.5	80.5	.43	-
20	73.6	73.3	70.5	70.4	.90	35.92	80.8	80.6	80.4	80.4	.41	-
21	73.9	71.4	71.0	71.0	.68	-	80.9	80.9	80.8	80.8	.39	-
22	74.8	73.2	71.0	70.9	.12	-	80.0	79.9	79.8	79.8	.39	-
23	76.5	73.4	72.4	72.0	.29	-	80.9	80.8	80.7	80.6	.11	-
24	76.7	72.3	72.1	72.1	.22	-	79.8	79.5	79.5	79.7	.11	36.22
25	75.9	75.0	72.9	72.8	.76	-	79.9	79.8	79.7	79.8	36.09	-
26	75.1	74.8	71.7	71.4	.99	-	79.9	79.4	78.7	78.7	35.75	-
27	75.1	72.1	71.9	71.9	.85	-	80.0	78.5	76.9	76.2	35.38	-
28	75.6	74.3	72.2	72.1	34.90	-	80.9	79.0	77.2	76.2	34.89	-
29	74.2	72.2	70.8	70.8	35.03	-	82.0	79.6	78.8	77.8	35.12	-
30	73.8	72.9	72.1	72.1	.47	-	83.5	80.2	78.2	77.0	34.83	-
31	74.3	73.3	71.3	71.3	35.28	-						
Mean	72.7	71.6	70.9	70.8	35.46	-	78.9	78.0	76.7	76.4	35.85	36.11

Table 17 (cont'd)

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 72 feet

1959

	July						August					
	Temperature °F				Salinity °/₀₀		Temperature °F				Salinity °/₀₀	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	85.0	83.8	77.8	76.8	34.61	36.19	84.0	83.0	75.8	75.5	33.13	-
2	83.1	80.0	77.7	77.1	35.14	-	83.0	80.9	75.0	74.9	.59	-
3	83.3	77.7	76.9	76.3	34.47	-	82.0	78.2	77.0	77.0	33.76	-
4	81.9	79.0	76.8	76.0	34.92	-	82.3	81.7	76.9	76.1	34.09	-
5	81.7	81.3	77.8	77.8	35.58	-	82.3	81.3	76.9	76.2	.44	36.14
6	82.0	81.9	78.8	77.9	.80	-	82.4	82.1	78.2	77.2	34.41	-
7	81.7	81.2	78.0	77.9	35.51	-	81.1	80.1	78.0	77.9	35.02	-
8	81.0	81.0	81.0	81.0	36.08	36.09	82.8	81.5	75.9	75.9	34.87	-
9	80.0	80.0	80.0	80.0	.10	-	82.0	79.1	78.1	78.1	34.80	-
10	79.6	79.5	79.4	79.4	36.04	-	79.9	78.9	77.6	77.2	35.33	-
11	80.0	79.8	79.7	79.7	35.72	-	80.7	79.7	77.9	77.5	.39	-
12	79.8	79.7	79.7	79.7	.84	-	81.9	78.6	77.0	77.1	.11	36.01
13	79.9	79.6	79.4	79.3	.66	-	81.1	78.2	76.1	76.1	.20	-
14	80.3	79.7	79.5	79.5	.44	-	81.2	79.0	76.4	76.2	.13	-
15	80.1	79.9	79.7	79.6	.44	35.91	81.5	79.5	77.3	77.2	.14	-
16	80.7	79.8	79.7	79.7	.38	-	81.7	78.1	78.1	78.0	.16	-
17	81.2	80.1	80.1	80.0	.41	-	81.8	78.5	78.3	78.3	35.03	-
18	81.2	80.2	80.1	80.1	.46	-	82.2	79.0	79.0	79.0	34.97	-
19	81.0	80.9	80.2	79.8	.58	-	82.4	81.6	79.0	78.9	.77	35.81
20	81.1	80.9	80.8	78.8	.57	-	82.3	81.7	79.2	79.2	34.40	-
21	81.8	81.3	80.1	78.2	.44	-	81.8	79.5	78.4	78.2	35.05	-
22	82.9	81.9	79.9	78.3	35.17	36.04	82.3	81.8	78.8	78.3	34.93	-
23	83.1	82.9	82.7	79.3	34.56	-	82.3	78.8	78.8	78.8	35.09	-
24	83.1	82.9	78.2	77.1	.84	-	82.4	77.8	77.7	77.7	34.56	-
25	83.5	82.8	78.2	76.9	.76	-	83.8	77.2	76.7	76.8	.32	-
26	83.9	83.2	76.9	76.8	.69	-	84.0	78.0	76.0	76.0	.80	36.07
27	83.9	83.1	79.3	77.2	.82	-	83.2	76.8	76.2	76.1	.93	-
28	79.3	79.2	78.0	77.2	.84	-	84.6	77.3	77.0	77.0	.77	-
29	79.0	78.9	77.2	75.6	34.41	36.19	84.0	77.1	77.1	77.1	.98	-
30	83.0	81.0	75.8	75.2	33.92	-	83.9	82.8	77.0	77.0	.34	-
31	83.7	83.2	75.6	74.8	33.35	-	83.0	80.4	77.1	76.9	34.46	-
Mean	81.7	80.9	78.9	78.2	35.18	36.08	82.4	79.6	77.4	77.2	34.71	36.01

Table 17 (cont'd)

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 72 feet

1959

	September						October					
	Temperature °F				Salinity °/₀₀		Temperature °F				Salinity °/₀₀	
Depth / Day	0'	30'	50'	70'	0'	70'	0'	30'	50'	70'	0'	70'
1	-	-	-	-	34.86	-	82.3	82.1	76.6	76.4	-	-
2	82.9	82.9	77.7	77.2	.88	35.18	81.3	81.3	81.2	81.2	36.27	-
3	83.0	81.0	77.6	77.0	.85	-	81.3	81.2	81.2	81.2	.30	-
4	83.1	83.0	77.0	76.8	.92	-	81.1	81.0	81.0	81.0	.35	-
5	83.1	76.3	76.1	76.1	.86	-	81.4	81.4	81.3	81.3	.39	-
6	83.2	80.1	76.1	76.0	.66	-	81.7	81.4	81.3	81.3	.39	-
7	83.3	80.4	76.1	76.1	34.80	-	81.0	81.0	81.1	81.1	.32	36.34
8	83.2	82.4	76.2	76.2	35.39	-	80.9	80.9	80.9	80.9	.28	-
9	82.4	78.3	77.2	77.2	.69	36.09	80.1	80.0	80.0	80.0	.13	-
10	82.0	77.9	77.7	77.7	.75	-	80.0	80.0	80.0	80.0	36.03	-
11	82.2	81.3	78.3	78.4	.77	-	77.0	77.0	77.0	77.0	35.87	-
12	81.8	81.7	80.3	80.0	35.81	-	79.4	79.4	79.4	79.4	.91	-
13	-	-	-	-	-	-	79.0	79.0	79.0	79.0	.88	-
14	80.0	80.0	79.9	79.9	35.96	-	79.0	79.0	79.0	79.0	.94	35.95
15	80.9	80.8	80.6	80.5	.55	-	79.0	79.0	79.0	79.0	35.93	-
16	81.2	80.9	80.9	80.9	.56	35.88	78.1	78.1	78.1	78.1	36.11	-
17	81.2	81.2	81.1	81.1	.73	-	78.8	78.8	78.8	78.8	35.93	-
18	80.8	80.8	80.8	80.8	.94	-	79.0	79.0	79.0	78.9	36.00	-
19	-	-	-	-	35.91	-	78.5	78.6	78.8	78.8	.08	-
20	80.0	80.0	80.0	80.0	36.10	-	78.1	77.9	77.9	77.9	36.00	-
21	80.0	80.0	80.0	80.0	.18	-	79.0	79.0	79.0	79.0	35.98	35.97
22	80.8	80.8	80.8	80.8	.20	-	-	-	-	-	36.09	-
23	80.8	80.8	80.7	80.7	.16	36.16	79.7	79.5	79.5	79.3	.17	-
24	80.7	80.6	80.5	80.5	.18	-	78.3	78.2	78.2	78.2	.02	-
25	-	-	-	-	.22	-	-	-	-	-	.06	-
26	80.8	80.7	80.6	-	.18	-	75.2	75.2	75.1	75.1	.02	-
27	80.4	80.5	79.7	-	36.27	-	74.2	74.2	74.2	74.0	.05	-
28	-	-	-	-	-	-	73.3	73.3	73.3	73.3	.10	36.09
29	-	-	-	-	-	-	72.9	72.9	72.9	72.9	.03	-
30	81.0	80.8	80.8	80.8	36.30	36.29	-	-	-	-	.01	-
31							73.6	73.5	73.4	73.4	36.01	-
Mean	81.6	80.6	79.0	-	35.65	35.92	78.7	78.6	78.4	78.4	36.09	36.09

Table 17 (cont'd)

FRYING PAN SHOALS LIGHTSHIP 33°28'00"N. 77°33'08"W. Depth of water - 82 feet

1959

Day	November Temperature °F 0'	30'	50'	70'	November Salinity °/oo 0'	70'	December Temperature °F 0'	30'	50'	70'	December Salinity °/oo 0'	70'
1	74.9	74.9	74.9	74.9	36.09	-	66.9	66.9	66.9	66.9	36.38	-
2	75.1	75.1	75.1	75.1	.11	-	67.3	67.4	67.3	67.2	-	36.52
3	77.6	77.6	77.5	77.5	.20	-	-	-	-	-	-	-
4	78.9	78.9	78.9	78.9	.30	36.29	65.8	66.0	66.0	66.0	36.52	-
5	76.1	76.0	75.9	75.9	.20	-	69.6	69.8	69.9	-	.43	-
6	72.0	72.0	72.0	72.0	.18	-	70.8	69.9	69.9	69.8	.44	-
7	-	-	-	-	36.18	-	64.9	65.0	65.0	65.0	.42	-
8	-	-	-	-	-	-	60.0	60.0	60.0	60.0	.01	-
9	74.0	74.0	74.0	74.0	36.38	-	62.2	62.2	62.3	62.3	.57	36.55
10	77.9	77.9	77.9	77.9	.44	-	65.1	65.1	65.0	65.0	36.43	-
11	76.2	76.2	76.2	76.2	.52	36.44	64.5	64.5	64.4	64.3	-	-
12	73.4	73.4	73.5	73.5	.46	-	-	-	-	-	-	-
13	75.9	75.9	75.8	75.8	.45	-	-	-	-	-	-	-
14	72.2	71.3	71.3	71.3	.56	-	61.3	61.3	61.4	61.3	36.29	-
15	-	-	-	-	-	-	69.2	68.0	65.2	64.9	.30	-
16	-	-	-	-	36.28	-	73.0	71.4	69.6	69.0	.33	36.46
17	70.9	70.9	70.9	70.9	36.39	-	71.0	71.0	71.0	71.1	.34	-
18	-	-	-	-	-	-	71.0	71.0	70.9	70.9	.35	-
19	70.6	70.3	70.3	70.3	36.31	-	69.1	69.1	69.1	69.1	.35	-
20	71.5	71.6	71.6	71.6	.45	-	61.7	61.7	61.7	61.7	.05	-
21	73.6	73.6	73.1	73.0	.44	-	69.9	69.9	69.6	69.2	.14	-
22	-	-	-	-	.32	-	69.3	69.3	69.5	69.5	.37	-
23	72.2	72.2	72.2	72.2	.42	-	68.3	68.5	68.5	68.5	36.39	36.41
24	70.9	70.8	70.8	70.8	36.37	-	-	-	-	-	-	-
25	-	-	-	-	-	-	67.0	67.0	67.0	67.0	36.41	-
26	-	-	-	-	36.34	-	66.1	66.1	66.1	66.0	.40	-
27	73.3	73.3	73.3	73.3	.36	-	66.5	66.3	66.5	66.5	.38	-
28	-	-	-	-	.47	-	67.8	67.8	67.8	67.8	.41	-
29	67.4	67.8	67.7	67.6	36.34	-	-	-	-	-	.41	36.41
30	-	-	-	-	-	-	65.5	65.5	65.6	65.7	36.42	-
31												
Mean	74.0	73.7	73.6	73.6	36.34	-	67.0	66.8	66.6	66.4	36.36	36.47

Savannah Lightship (Figure 18, Table 18)

Surface water temperatures were below the mean in January, early February and late April; at other times they were near or slightly above through mid-November. The summer maximum at surface and bottom was higher than those of the three previous years, and appeared in late August, some 20 days earlier than at stations north of Cape Hatteras.

Salinity at the Savannah station varies widely both seasonally and from year to year since the lightship is close to numerous rivers debouching to the north and west. The minimum in April reflects the heavy rains experienced during March throughout the Southeast, when monthly totals ranged up to 400 percent of normal in Florida.

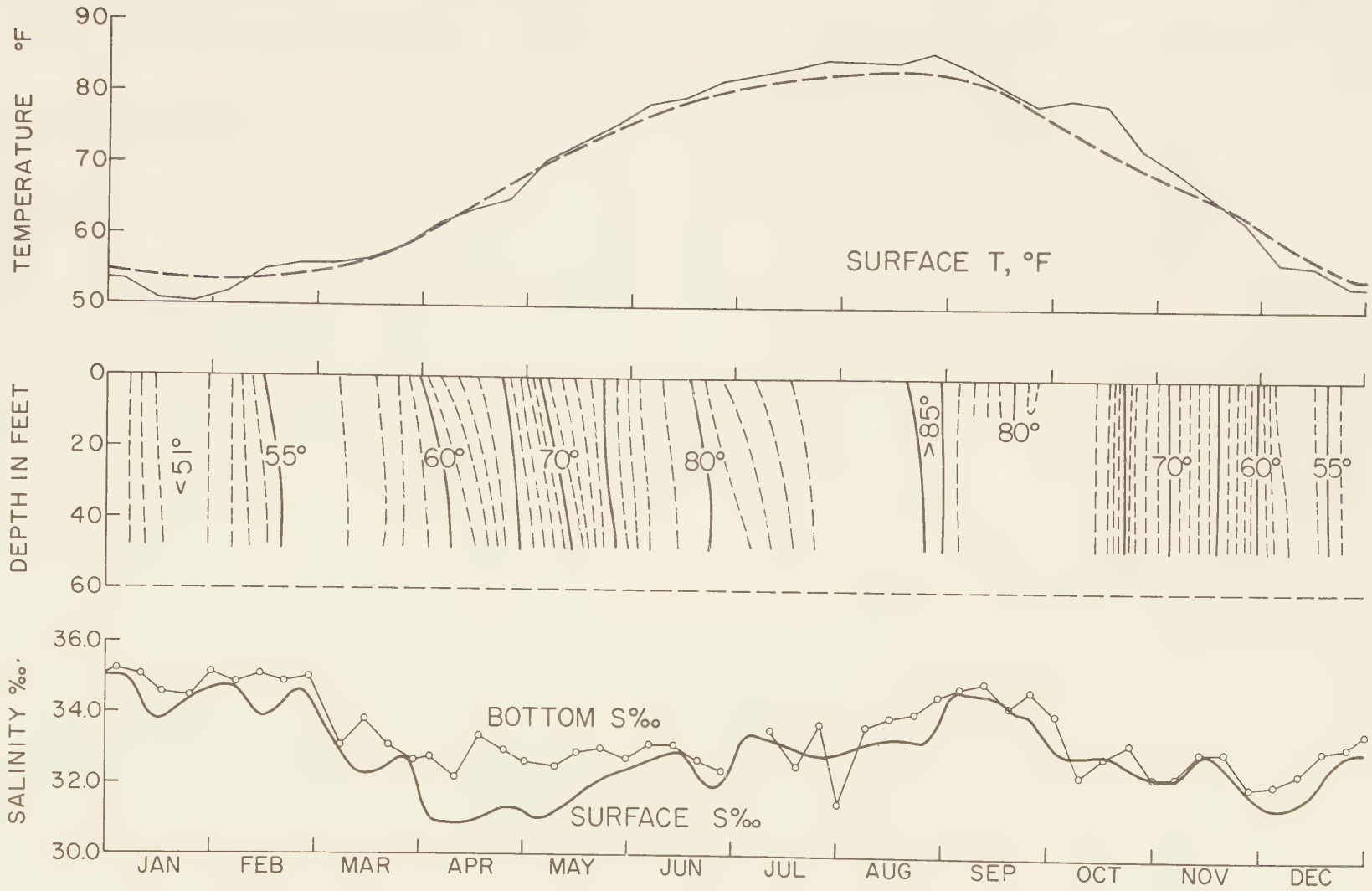

Figure 18. Savannah Lightship, 1959. (Dashed line in upper diagram, mean for period 1947-1955.)

Table 18

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1959

Depth / Day	January Temperature °F 0'	30'	48'	January Salinity °/oo 0'	48'	February Temperature °F 0'	30'	48'	February Salinity °/oo 0'	48'
1	54.0	53.8	53.8	35.11	-	52.2	52.3	52.3	35.14	-
2	-	-	-	.09	-	-	-	-	.01	-
3	54.7	54.6	54.5	.23	35.24	51.2	51.2	51.1	.43	-
4	54.7	54.4	54.3	35.08	-	51.3	51.1	51.2	35.04	-
5	53.0	53.3	53.3	34.94	-	51.8	51.8	51.9	34.38	-
6	52.8	52.2	52.2	35.15	-	51.4	52.1	52.2	33.82	-
7	53.0	53.0	53.0	34.97	-	-	-	-	34.85	34.86
8	52.3	52.2	52.2	34.65	-	51.8	51.8	51.7	.78	-
9	53.0	53.0	53.0	35.16	-	52.7	52.2	52.2	.72	-
10	53.2	53.2	53.0	.06	35.06	53.1	52.7	52.6	34.83	-
11	52.1	52.1	52.1	.11	-	54.1	53.1	53.1	33.21	-
12	52.7	52.1	52.1	35.21	-	53.3	53.1	53.1	34.88	-
13	50.9	52.1	52.1	33.83	-	53.7	52.9	52.9	35.20	-
14	51.0	52.0	52.0	.41	-	56.6	53.7	53.6	30.18	35.10
15	51.0	52.3	52.2	33.22	-	-	-	-	33.60	-
16	51.7	51.7	51.7	33.86	34.59	55.6	53.8	53.9	33.70	-
17	-	-	-	.23	-	54.9	54.0	54.0	34.14	-
18	48.8	49.0	49.0	34.06	-	55.6	54.1	54.1	33.99	-
19	48.0	49.2	49.0	33.51	-	55.2	54.9	54.9	34.59	-
20	49.0	49.3	49.4	32.53	-	55.8	55.8	55.8	35.06	-
21	49.0	49.2	49.2	33.42	-	55.7	55.5	55.5	34.84	34.90
22	50.0	50.0	50.0	34.23	-	55.1	55.2	55.3	.34	-
23	50.1	50.2	50.5	.41	-	55.6	55.5	55.1	34.80	-
24	49.0	49.1	49.1	.12	34.49	55.6	55.1	55.1	33.69	-
25	49.0	49.0	49.0	.39	-	55.2	55.1	55.1	34.35	-
26	50.0	50.0	50.0	.35	-	56.1	56.2	56.4	34.97	-
27	50.2	50.5	50.6	.14	-	57.1	57.2	57.1	35.30	-
28	51.2	51.0	-	.58	-	56.4	56.6	56.7	35.08	35.04
29	51.2	51.4	51.5	34.59	-					
30	52.5	52.1	52.1	35.10	-					
31	52.0	52.0	52.0	35.14	35.15					
Mean	51.4	51.5	51.5	34.42	34.91	54.3	53.9	53.9	34.43	34.98

Table 18 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1959

	March					April				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	55.5	55.9	55.9	34.21	-	58.3	58.0	58.0	32.61	-
2	55.5	55.6	55.6	34.52	-	59.1	59.0	59.0	32.70	-
3	55.0	55.9	56.0	33.69	-	60.6	59.1	59.0	30.55	32.78
4	55.5	55.7	55.8	33.87	-	59.9	59.1	59.1	.54	-
5	55.8	55.8	55.8	34.11	-	60.6	59.4	58.8	.34	-
6	56.1	56.0	55.8	33.62	-	61.9	59.9	59.9	.15	-
7	55.7	56.0	56.1	31.69	33.07	62.6	60.1	60.1	.38	-
8	56.0	56.0	56.0	31.20	-	64.2	60.6	60.2	.55	-
9	57.0	56.0	56.0	-	-	65.9	60.7	60.7	.37	-
10	57.0	56.5	56.3	32.35	-	65.8	61.0	60.9	30.49	32.18
11	57.8	56.4	56.5	31.06	-	68.9	61.6	61.1	29.76	-
12	56.2	56.2	56.2	33.25	-	68.5	61.1	61.1	29.80	-
13	56.4	56.3	56.3	30.97	-	63.0	63.0	61.1	31.11	-
14	57.2	56.8	56.8	30.93	33.81	59.8	60.2	60.2	32.86	-
15	57.0	56.9	56.9	-	-	60.1	60.1	60.1	33.55	-
16	56.7	57.1	57.0	32.07	-	62.8	60.7	60.3	30.93	-
17	56.3	55.6	56.2	32.48	-	63.0	60.9	60.8	.44	33.36
18	56.1	56.2	56.2	33.12	-	63.6	60.9	60.9	.41	-
19	55.9	55.9	55.9	.28	-	64.3	63.0	60.9	30.33	-
20	56.0	55.5	55.5	33.33	-	65.2	62.2	62.1	29.99	-
21	58.5	56.8	56.6	32.37	33.06	66.4	63.1	63.1	29.79	-
22	57.6	56.8	56.8	.37	-	64.9	63.1	63.1	31.27	-
23	56.7	56.7	56.5	32.86	-	63.3	63.2	63.0	32.11	-
24	58.0	58.0	58.0	33.68	-	62.9	62.7	62.7	.74	32.94
25	59.5	57.9	57.9	32.77	-	64.0	63.4	63.3	32.13	-
26	59.1	58.0	58.0	31.56	-	64.9	64.0	63.8	31.36	-
27	59.4	59.1	59.1	32.46	-	64.9	64.9	64.8	31.75	-
28	59.0	59.0	59.0	.63	32.66	66.0	65.9	65.7	30.88	-
29	58.3	58.3	58.3	32.94	-	66.9	66.1	66.0	.72	-
30	59.0	58.6	58.5	33.13	-	67.5	66.3	65.7	30.62	-
31	59.8	59.1	59.0	33.19	-					
Mean	57.1	56.8	56.8	32.75	33.15	63.7	61.8	61.5	31.04	32.82

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Table 18 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1959

Depth / Day	May Temperature °F 0'	30'	48'	May Salinity °/oo 0'	48'	June Temperature °F 0'	30'	45'	June Salinity °/oo 0'	45'
1	68.0	65.6	65.2	30.70	32.63	78.8	77.9	77.5	30.82	-
2	69.3	65.8	65.8	29.75	-	78.8	77.8	77.5	31.97	-
3	70.0	65.8	65.7	30.37	-	78.6	76.8	76.8	32.50	-
4	70.8	66.1	66.1	30.31	-	79.3	77.8	77.7	.55	-
5	72.6	66.6	66.3	31.10	-	79.1	78.1	78.1	.65	-
6	69.8	69.5	67.3	.73	-	78.4	78.2	77.8	32.76	33.15
7	70.0	69.9	68.0	31.96	-	78.8	78.7	78.7	33.02	-
8	-	-	-	-	-	78.1	77.9	77.9	.03	-
9	73.1	69.1	69.1	31.41	32.50	78.7	78.3	78.3	.01	-
10	71.9	69.2	68.5	31.69	-	79.2	78.8	78.8	.05	-
11	72.7	72.3	69.0	-	-	79.4	78.7	78.7	.14	-
12	73.0	70.3	69.5	31.76	-	79.5	79.1	79.0	.13	-
13	74.9	72.2	70.1	.79	-	80.2	79.2	79.1	.10	33.12
14	72.8	72.5	71.1	.55	-	79.9	79.9	79.9	.02	-
15	72.1	72.0	69.9	.64	32.88	79.3	79.1	79.1	.36	-
16	72.1	71.5	70.9	.67	-	79.8	78.8	78.8	33.16	-
17	72.9	71.0	70.6	.96	-	79.6	79.4	79.4	32.89	-
18	73.4	71.1	71.1	.70	-	79.6	79.6	79.5	.62	-
19	74.6	71.3	71.0	.34	-	79.4	79.2	79.2	.57	-
20	73.6	72.8	71.3	31.95	-	79.8	79.7	79.7	32.30	32.70
21	72.8	72.7	72.0	32.37	-	80.8	79.8	79.8	31.74	-
22	75.4	73.4	73.3	31.89	33.01	81.1	80.5	80.4	31.80	-
23	75.4	75.0	74.2	32.14	-	81.7	80.8	80.7	32.01	-
24	75.1	74.9	74.8	.45	-	81.1	80.8	80.8	30.42	-
25	76.3	74.2	74.1	.21	-	82.2	80.8	80.8	32.11	-
26	75.9	75.8	75.8	.47	-	81.7	80.3	80.3	.39	-
27	75.7	75.3	75.3	.43	-	82.5	80.6	80.3	32.40	32.40
28	75.9	75.8	75.7	.67	-	82.5	80.0	80.0	31.81	-
29	76.2	76.1	76.0	.53	32.71	82.7	79.2	79.2	32.37	-
30	76.7	76.4	76.1	32.26	-	82.9	79.8	79.8	32.02	-
31	77.8	76.8	76.2	31.25	-					
Mean	73.4	71.7	71.0	31.69	32.75	80.1	79.2	79.1	32.46	32.84

Table 18 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1959

Depth / Day	July Temperature °F 0'	30'	48'	July Salinity °/oo 0'	48'	August Temperature °F 0'	30'	48'	August Salinity °/oo 0'	48'
1	84.6	79.9	79.8	32.87	-	84.9	84.8	84.8	31.49	31.48
2	84.1	79.5	79.5	32.87	-	84.6	84.6	84.5	32.15	-
3	82.8	79.4	79.4	33.49	-	84.7	84.9	85.0	32.79	-
4	82.6	79.9	79.9	.38	-	84.1	83.4	83.4	33.40	-
5	80.6	80.5	80.5	.62	-	83.9	83.7	83.5	.40	-
6	82.1	81.6	81.6	.89	-	85.1	84.1	-	.26	-
7	82.6	81.8	81.8	.40	-	85.2	84.5	84.4	.07	-
8	82.7	82.7	82.6	.60	-	85.2	84.8	84.8	.55	33.69
9	83.1	82.6	82.5	.58	-	84.7	84.1	84.1	.87	-
10	83.9	82.8	82.8	.56	-	85.8	84.2	84.1	.77	-
11	84.1	83.3	83.1	.48	33.59	85.3	84.0	84.0	.86	-
12	84.0	83.1	83.1	.49	-	84.2	84.2	84.0	.94	-
13	84.6	82.9	82.5	.44	-	84.4	84.0	83.9	.96	-
14	83.7	82.6	82.4	.23	-	83.8	84.1	84.1	.33	-
15	83.1	82.9	82.9	.12	-	84.1	83.9	83.9	33.20	33.95
16	83.0	82.9	82.9	.23	-	84.5	83.7	83.7	32.80	-
17	83.6	82.9	82.9	33.24	-	84.2	84.1	84.1	33.47	-
18	83.9	83.1	83.1	32.52	32.52	84.2	84.3	84.3	33.33	-
19	83.4	83.3	83.3	32.35	-	85.1	85.0	85.0	32.17	-
20	84.1	83.2	83.1	33.11	-	85.6	84.9	84.9	.12	-
21	84.2	83.9	83.8	32.92	-	85.8	84.8	84.8	.43	-
22	84.3	83.9	83.8	33.13	-	86.1	85.1	85.0	.84	34.10
23	84.7	84.1	84.1	.22	-	86.1	85.1	85.1	.82	-
24	85.4	84.4	84.0	.46	-	86.1	85.1	85.1	32.65	-
25	85.1	84.2	84.1	.48	33.77	86.2	85.2	85.2	33.01	-
26	85.2	84.6	84.5	.53	-	86.2	85.0	85.0	.10	-
27	85.0	84.9	84.9	.91	-	86.6	85.2	85.2	.28	-
28	84.9	84.9	84.7	33.29	-	85.5	85.1	85.0	.49	-
29	85.2	84.7	84.5	31.94	-	86.1	85.2	85.2	33.52	34.58
30	85.6	84.9	84.9	31.19	-	85.2	85.0	85.0	34.00	-
31	85.8	85.1	85.1	30.74	-	84.7	84.8	84.8	34.71	-
Mean	83.9	82.9	82.8	33.11	-	85.1	84.5	84.5	33.22	33.56

Table 18 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1959

	September					October				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	84.4	84.1	84.1	34.42	-	-	-	-	-	-
2	84.1	84.1	84.1	.46	-	79.1	79.0	78.9	33.64	34.05
3	84.0	84.0	84.0	.47	-	79.2	79.0	79.0	.78	-
4	-	-	-	.71	-	79.1	78.9	78.9	.65	-
5	84.1	84.1	84.1	.78	34.82	79.1	78.9	78.9	.51	-
6	-	-	-	.81	-	79.4	79.3	-	33.52	-
7	-	-	-	.92	-	79.2	79.3	79.5	32.86	-
8	83.7	83.6	83.5	34.97	-	80.0	79.9	79.8	33.03	-
9	83.1	83.0	83.0	35.06	-	79.9	79.9	79.8	31.23	32.33
10	83.1	83.0	83.0	.00	-	80.1	79.8	79.8	30.86	-
11	83.0	-	-	.05	-	80.1	80.0	80.0	31.50	-
12	82.6	-	-	35.07	34.99	80.4	80.2	80.3	31.58	-
13	81.7	-	-	34.80	-	80.1	80.0	80.0	33.13	-
14	81.2	-	-	.71	-	79.9	80.0	80.1	.18	-
15	81.1	-	-	.48	-	79.7	79.8	79.9	33.29	-
16	81.1	81.1	-	.49	-	78.9	78.8	78.8	32.89	32.89
17	81.1	81.1	-	.62	-	78.2	78.2	78.2	33.44	-
18	80.2	-	-	.21	-	77.8	77.7	77.6	.28	-
19	-	-	-	.24	34.28	76.8	76.8	76.8	.61	-
20	79.0	-	-	.24	-	76.0	76.0	76.0	.64	-
21	-	-	-	.19	-	76.0	75.9	75.9	.74	-
22	78.6	-	-	34.17	-	74.7	74.5	74.5	.11	-
23	78.4	-	-	-	-	74.1	74.1	74.1	33.18	33.28
24	78.7	78.6	78.7	34.13	-	73.3	73.9	74.0	32.19	-
25	78.7	78.7	-	.33	34.74	71.9	71.9	72.4	31.43	-
26	78.9	-	-	.66	-	71.0	72.2	72.3	31.86	-
27	78.9	-	-	.17	-	71.8	71.7	71.6	32.27	-
28	78.9	78.9	-	34.14	-	71.0	71.1	71.2	.24	-
29	-	-	-	-	-	71.5	71.3	71.2	.56	-
30	77.9	77.4	77.4	32.52	-	71.3	71.6	71.7	.38	32.30
31						71.7	71.5	71.4	32.27	-
Mean	81.1	-	-	34.49	34.71	76.7	76.7	76.6	32.76	32.97

Table 18 (cont'd)

SAVANNAH LIGHTSHIP 31°56.5'N. 80°39.6'W. Depth of water - 48 feet

1959

	November					December				
	Temperature °F			Salinity °/oo		Temperature °F			Salinity °/oo	
Depth / Day	0'	30'	48'	0'	48'	0'	30'	48'	0'	48'
1	71.4	71.2	71.3	32.34	-	59.0	58.9	59.0	32.13	-
2	71.2	71.2	71.5	.31	-	59.0	59.3	59.3	.30	-
3	71.0	70.9	70.9	.70	-	59.0	59.0	59.0	.42	-
4	70.0	69.9	69.8	.47	-	58.0	58.1	58.0	.16	32.14
5	70.1	70.2	70.3	32.39	-	58.2	58.1	58.1	.50	-
6	70.1	70.7	70.8	31.95	32.31	57.7	58.1	58.1	32.11	-
7	70.1	70.3	70.8	31.72	-	56.0	56.0	56.0	31.39	-
8	68.7	68.8	68.8	32.32	-	54.0	55.7	55.8	30.36	-
9	67.8	67.8	67.8	31.99	-	52.9	56.6	56.9	29.43	-
10	67.0	66.9	66.9	32.08	-	53.7	56.6	57.0	29.31	-
11	67.3	67.2	67.3	33.34	-	54.5	56.7	56.8	30.23	32.43
12	66.9	66.9	67.0	32.83	-	55.0	56.6	56.9	.46	-
13	66.8	66.8	66.7	.96	33.01	55.0	57.3	57.5	30.21	-
14	67.1	66.6	66.8	.76	-	56.5	56.8	57.0	31.43	-
15	66.5	66.2	66.4	32.77	-	56.4	56.3	56.1	32.70	-
16	66.9	66.9	66.9	33.28	-	57.4	56.9	56.9	33.18	-
17	66.1	66.2	66.3	32.72	-	57.1	57.0	57.0	33.17	-
18	65.8	65.3	65.6	33.06	-	56.2	57.0	57.0	32.48	33.09
19	64.5	64.7	64.8	.21	-	56.0	57.0	57.0	31.40	-
20	64.1	64.1	64.1	33.05	33.03	56.8	56.9	56.8	33.24	-
21	63.5	64.0	64.0	32.72	-	55.8	55.8	55.9	33.07	-
22	63.1	63.1	63.3	32.43	-	55.4	55.4	55.4	32.91	-
23	63.8	63.5	63.5	33.28	-	54.7	54.5	54.5	32.97	-
24	63.8	63.7	64.2	33.14	-	53.0	53.1	53.1	33.23	-
25	62.2	62.6	64.1	31.24	-	52.7	53.0	53.0	33.14	33.18
26	-	-	63.0	30.92	-	52.7	52.7	53.0	32.96	-
27	62.0	62.2	63.0	31.29	32.07	52.9	53.0	53.0	33.37	-
28	63.0	62.9	62.9	.79	-	53.7	53.6	53.6	.33	-
29	61.0	61.0	61.0	.84	-	53.3	53.3	53.4	33.18	-
30	59.8	59.5	59.3	31.94	-	52.2	53.1	53.1	32.40	-
31						52.6	52.6	52.7	32.50	-
Mean	66.3	66.3	66.3	32.43	32.60	55.4	56.0	56.0	32.12	32.71

LITERATURE CITED

Bumpus, Dean F.
1960 Investigations of climate and oceanographic factors influencing the environment of fish. Unpublished manuscript. Woods Hole Oceanographic Institution Reference 60-1.

Day, C. Godfrey
1959 Oceanographic observations, 1958, east coast of the United States. U. S. Department of the Interior, Fish and Wildlife Service, Special Scientific Report - Fisheries No. 318, 119 pp.

1959 Weatherwise, vol. 12, 2-6, American Meteorological Society, Boston.

1960 Weatherwise, vol. 13, 1, American Meteorological Society, Boston.

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